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SOAP

SOAPS • INSECTICIDES • DISINFECTANTS • CLEANERS • POLISHES • SANITARY SUPPLIES • EXTERMINATING

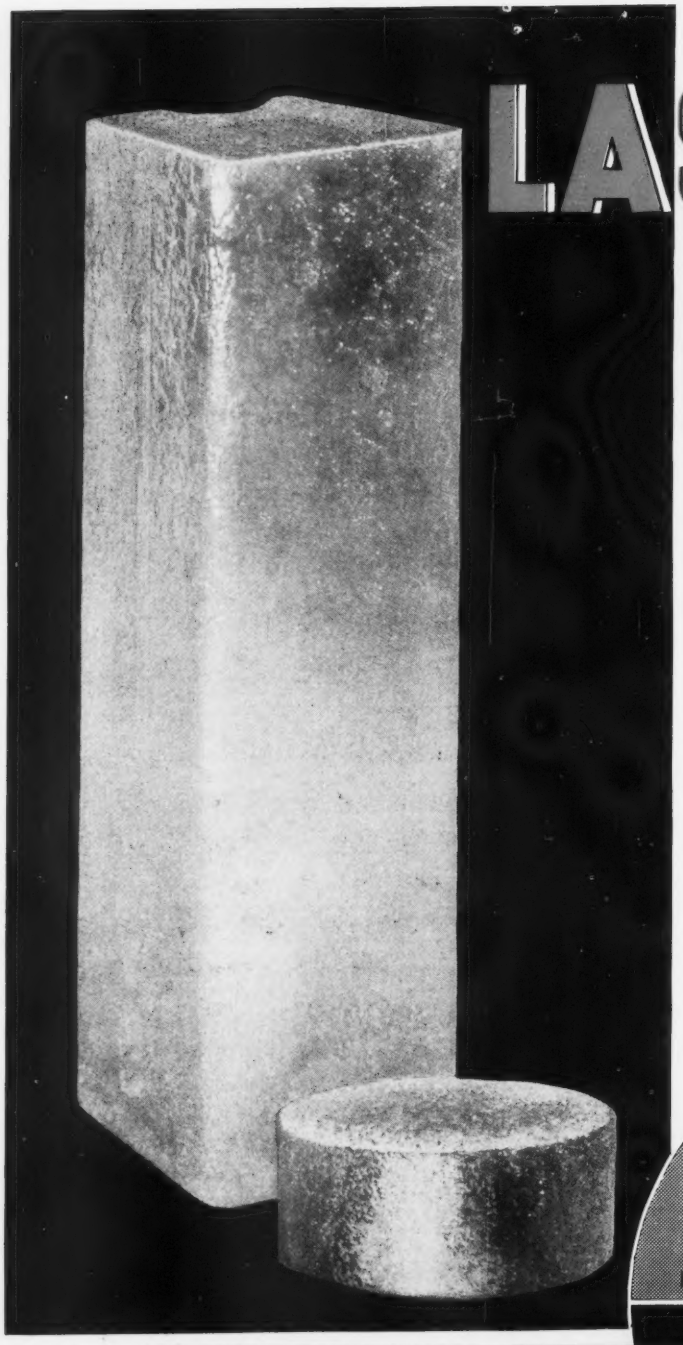
PURITY IS A CERTAINTY IN . . . .

GIVAUDAN
PHENYL ETHYL
ALCOHOL

Our long experience in production . . . plus our up-to-date equipment and exceptionally rigid system of control over manufacture, has made purity a *certainty* in GIVAUDAN PHENYL ETHYL ALCOHOL.

This purity is evident in the uniformly fresh, sweet, rose-like odor it possesses. We guarantee it to be absolutely free from any mixtures. For in PHENYL ETHYL ALCOHOL—as in other materials for soap production—the GIVAUDAN label is a symbol of safety!

GIVAUDAN
DELAWANNA INC.
80 FIFTH AVENUE, NEW YORK, N. Y.
Branches: Philadelphia Los Angeles Atlanta Cincinnati Detroit Dallas
Baltimore New Orleans Chicago San Francisco Seattle Montreal Havana

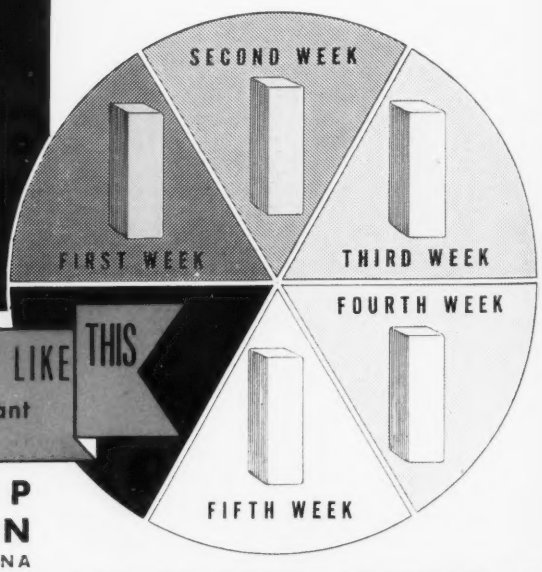


LASTING ODOR

The big thing that impresses the buyer of a Falcon Deodorant, is its long-lasting odor. From the moment the cellophane wrapper is broken, pleasing fragrance travels to every corner of the room, deodorizing uniformly, until the last atom of para has evaporated.

Such lasting odor comes only from the finest perfumes. Add to this our original process of moulding deodorants cold under pressure, and you have the reasons for Falcon long-life, and unfailing fragrance.

Keep Falcon Blocs, Blockettes and Crystals on hand. They cost no more than ordinary deodorants, and offer a greater margin of profit. And once your customers use Falcon, they'll never be satisfied with any other.



ORDINARY DEODORANTS PERFORM LIKE THIS

FALCON'S effectiveness is constant throughout the life of the bloc

EAGLE SOAP CORPORATION

HUNTINGTON INDIANA

FALCON DEODORANTS

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FULD MAKES
for the
LEADERS

LIQUID CLEANERS
Pine Scrub Soap
Sassafras Scrub Soap
Floor Bleach
Rug Shampoo

OIL and SOFT SOAP
All Percentage Oil Soaps
Jelly Soaps

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Liquid Hand Soaps
(All percentages 10 to 40%)
Shampoos
Cocoanut Oil Base Soaps

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Coal Tar
Cresol Compounds
Chlorine

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Fly Sprays
Cattle Sprays
Pyrethrum Sprays
Moth Spray
Sprays for Special Purpose

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Self-Polishing Wax
Liquid Wax
Wood Seal
Gym Seal
Terrazzo Seal
Wax-Var
Paste Wax
Dance Floor Wax

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LIQUID DEODORANTS
Chlorozif
Forma Chloro Sprays
Theatre Sprays
Pine Deodorant
Drip Machine Fluid

DEODORANT BLOCKS and CRYSTALS
Urinal Blocks
Deodorant Blocks
2 to 40 oz. sizes
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ALL'S WELL that ENDS SWELL

Our uniform strength PURE STEAM DISTILLED PINE OIL DISINFECTANTS will "ring in the new" business for you.

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Produced in varied strengths ranging from Coefficient 3 to Coefficient 6.

For another year the Fuld Complete Line of Sanitary Chemicals has been ringing the cash register bells for dealers all up and down America. Swell for them and swell for us! Sell the Fuld Line UNDER YOUR OWN LABEL next year and watch your sales and profits swell.

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Not even the Chinese . . .

Could find a flaw in the Dependability of the time tried Clifton Plan. It comprises a line of Profitable Sanitary Products you will be proud to handle,—under attractive imprint labels if you prefer.

Inquire today (no obligation) about Liquid Soap, Base, Dispensers, Floor Scrub, Oil Soap, Deodorizing Blocks and Containers, Metal Polish, Rubless Wax, Furniture Cream, Silver Polish, Shampoo, etc.

CLIFTON CHEMICAL CO.

246 FRONT ST. NEW YORK

SOAP

Reg U. S. Patent Office

Volume XI
Number 12

December, 1935

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Your specifications and the final analysis of a Standard shipment are always identical....

"STANDARD"
Always a good silicate specification..

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Aldehyde C12
Aldehyde C14
Aldehyde C16
Aldehyde C18
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Amyl Cinnamic Aldehyde
Amyl Salicylate
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Anethol
Anisic Aldehyde
Benzaldehyde F.F.C.
Benzaldehyde Techn.
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Benzyl Acetate F.F.C.
Benzyl Acetate Extra F.F.C.
Benzyl Alcohol F.F.C.
Benzyl Benzoate
Benzyl Butyrate
Benzyl Cinnamate
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Benzyl Propionate
Benzyl Salicylate
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Bornyl Acetate Pure
Bornyl Acetate Cryst.
Bromstyrol
Cinnamic Alcohol
Cinnamic Aldehyde
Cinnamyl Acetate
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Citronellyl Acetate
Coumarin Crystals
Coumarin Powdered
Citronellyl Butyrate
Citronellyl Formate
Citronellyl Propionate
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Dimethyl Anthranilate
Dimethyl Hydroquinone
Diphenyl Methane
Diphenyl Oxide
Ethyl Benzoate
Ethyl Butyrate
Ethyl Cinnamate
Ethyl Phenyl Acetate
Ethyl Propionate
Ethyl Salicylate
Ethyl Vanillin
Eugenol
Eugenol Extra
Geraniol Extra
Geraniol Pure
Geraniol Soap
Geranyl Acetate
Geranyl Acetate Extra
Geranyl Butyrate
Geranyl Formate
Geranyl Propionate
Heliotropine
Hydroxycitronellal
Indol
Ionone Alpha
Ionone Beta
Ionone Pure
Ionone Soap
Iso Butyl Benzoate
Iso Butyl Phenyl Acetate
Iso Butyl Salicylate
Iso Eugenol Extra
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Linalyl Acetate
Methyl Acetophenone
Methyl Anthranilate
Methyl Benzoate
Methyl Cinnamate
Methyl Eugenol
Methyl Heptenone
Methyl Heptine Carbonate
Methyl Ionone
Methyl Iso Eugenol
Methyl Nonyl Acetaldehyde
Methyl Para Cresol
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Phenyl Ethyl Acetate
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Phenyl Ethyl Propionate
Phenyl Ethyl Valerianate
Phenyl Propyl Acetate
Phenyl Propyl Alcohol
Phenyl Propyl Aldehyde
Rhodinol
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Oil Lavender Spike
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If you are interested in a perfume odor for any purpose, give us the type odor desired, such as, Rose, Lilac, etc., advise us preparation you wish to perfume, and by all means mention the price you can afford to pay. Our *LABTEST* perfume odors, produced by one of the foremost perfumers in this country, are products of exceptional merit. Consult us and SAVE.

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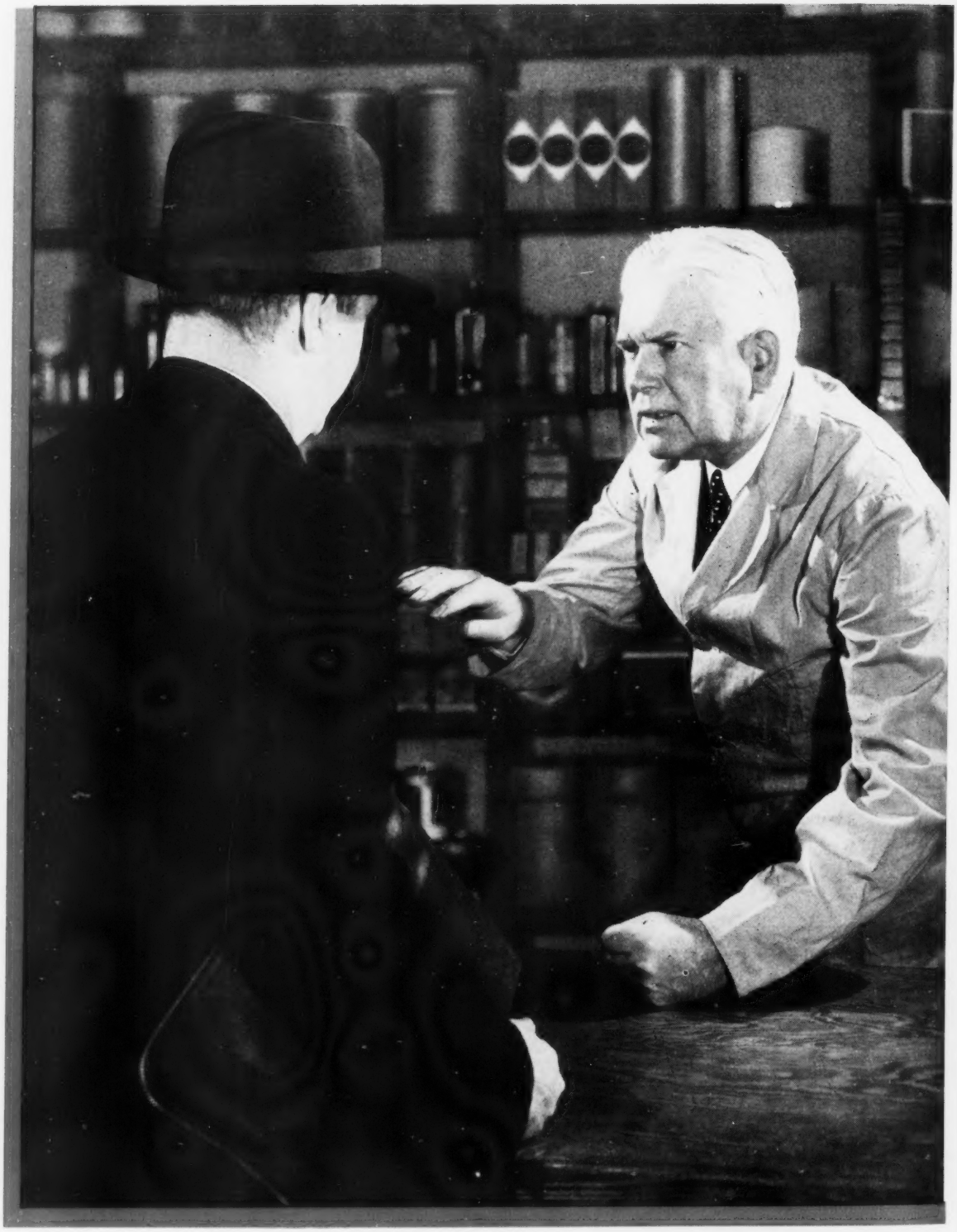

AMERICAN

TURNOVER! Say – the only turnover your product gets is when we dust it!

Discouraging? Yes. But more important, it is a signal that something is probably wrong at the point of sale.

If this happens in the merchandising of your product, has it occurred to you that we might be able to help you find out the reason why?

We have practically grown up with package merchandising. We have seen many problems solved and had a share in their solving. This accumulated experience is yours without obligation. But if yours is a new problem, you will find us ready and willing to work with you in solving it.

A letter to us may help you solve your problem. Address the Sales Promotion Department of the American Can Company, 230 Park Avenue, New York City.

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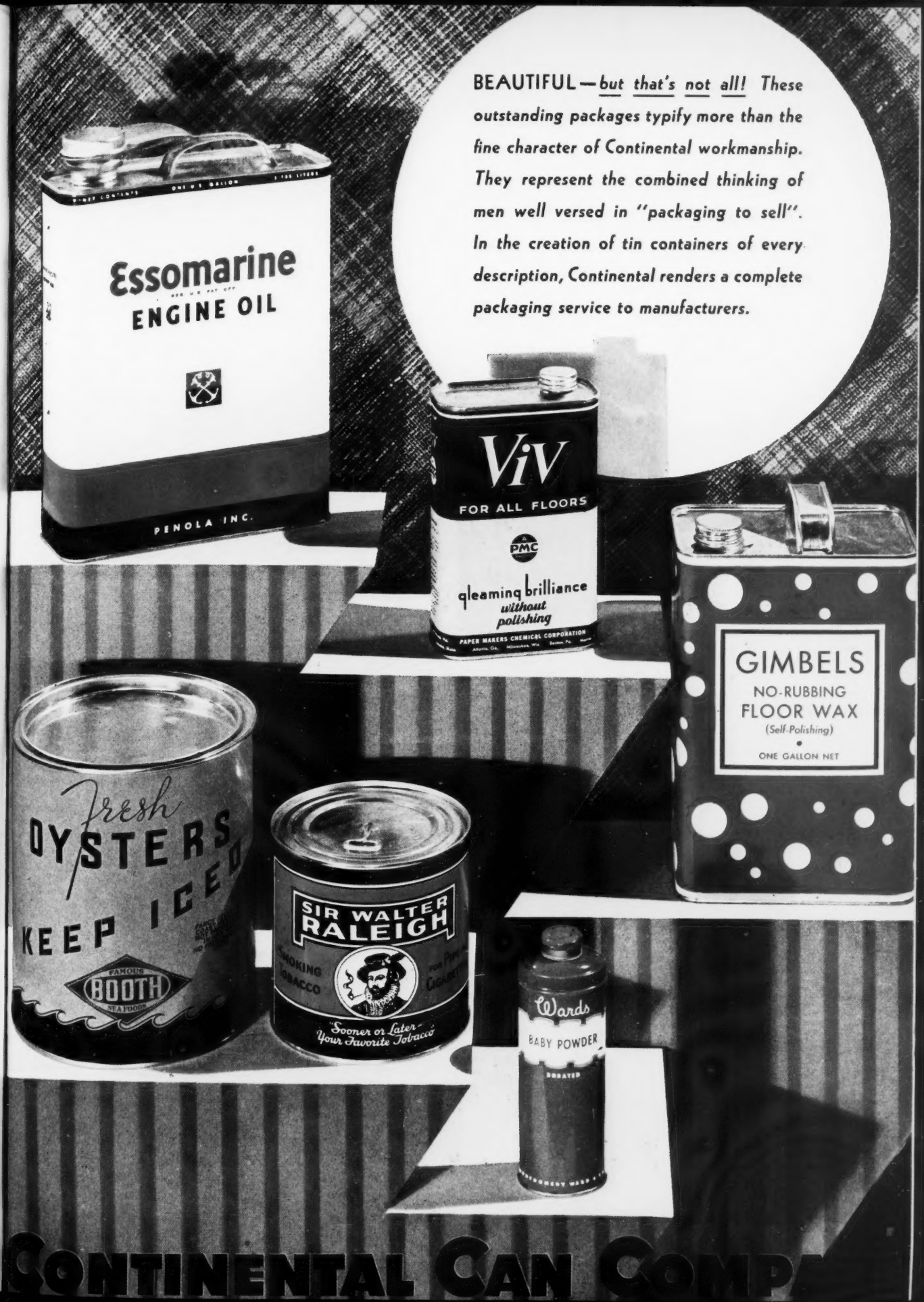
Americans are proud of the industrial achievements that have made their brawn, courage and ingenuity world famous. The chief disease which threatens that supremacy is tuberculosis. It is the greatest cause of death between the ages of 15 and 45. Help protect American man power from this enemy by purchasing the Christmas Seals that fight it all year round. The seals you buy today may save your life tomorrow.

The National, State and Local Tuberculosis Associations of the United States

Buy Christmas Seals


BEAUTIFUL—but that's not all! These outstanding packages typify more than the fine character of Continental workmanship. They represent the combined thinking of men well versed in "packaging to sell". In the creation of tin containers of every description, Continental renders a complete packaging service to manufacturers.
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gleaming brilliance
without
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BOOTH
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SMOKING
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Your Favorite Tobacco"
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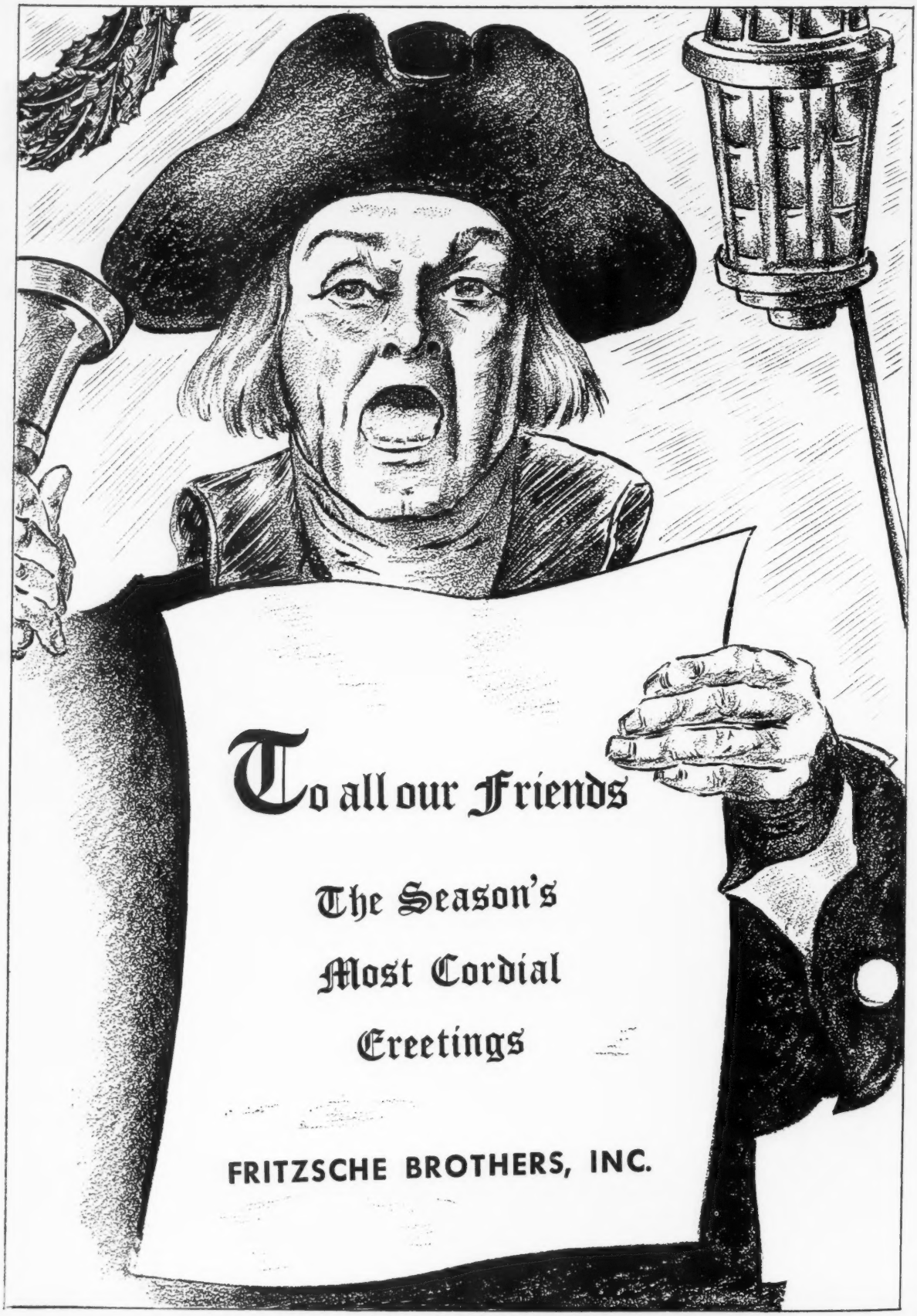
To all our Friends
The Season's
Most Cordial
Greetings
FRITZSCHE BROTHERS, INC.

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REDUCTION *in manufacturing costs*
No REDUCTION *in quality of product*

10 years ago this problem was presented to us by our first customer—today it is a problem which faces virtually every manufacturer and which we are fitted by long experience to solve for you without loss of time and at minimum expense.

The combination of natural odors with artificial scents and other methods of reducing your manufacturing costs have been the subject of exhaustive studies by our analytical department.

If lowering your manufacturing costs is your problem, if heightening the "sales appeal" of your product is another—may we welcome your inquiry?

NEW

PERFUME OIL 413

An Inexpensive Substitute for

OIL SASSAFRAS ARTIFICIAL

Perfume Oil 413 is exclusive with Magnus, Mabee & Reynard, Inc. It has a clean, pleasant odor and can be substituted for Oil Sassafras Artificial without loss of efficiency. Its detergent qualities and permanency are superior to Sassafras Artificial and its volume of odor is exceptionally high.

Like ANDRO, M M & R, which is widely used as a substitute for Oil Citronella, Perfume Oil 413 has been perfected after long research to fill a definite requirement in the industry.

The use of this new specialty for most economical and efficient results will be explained in detail, and a sample sent upon request.

MAGNUS, MABEE & REYNARD, Inc.

ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUMING PRODUCTS . . . SINCE 1895

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assures
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NOW a complete line of sanitary supplies sold thru jobbers only

DISINFECTANTS • INSECTICIDES • DEODORANT BLOCKS • POLISHES • WAXES • GYM FINISH • FLOOR SEAL • OIL SOAPS LIQUID SOAPS • COCONUT BASE SOAPS

THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO

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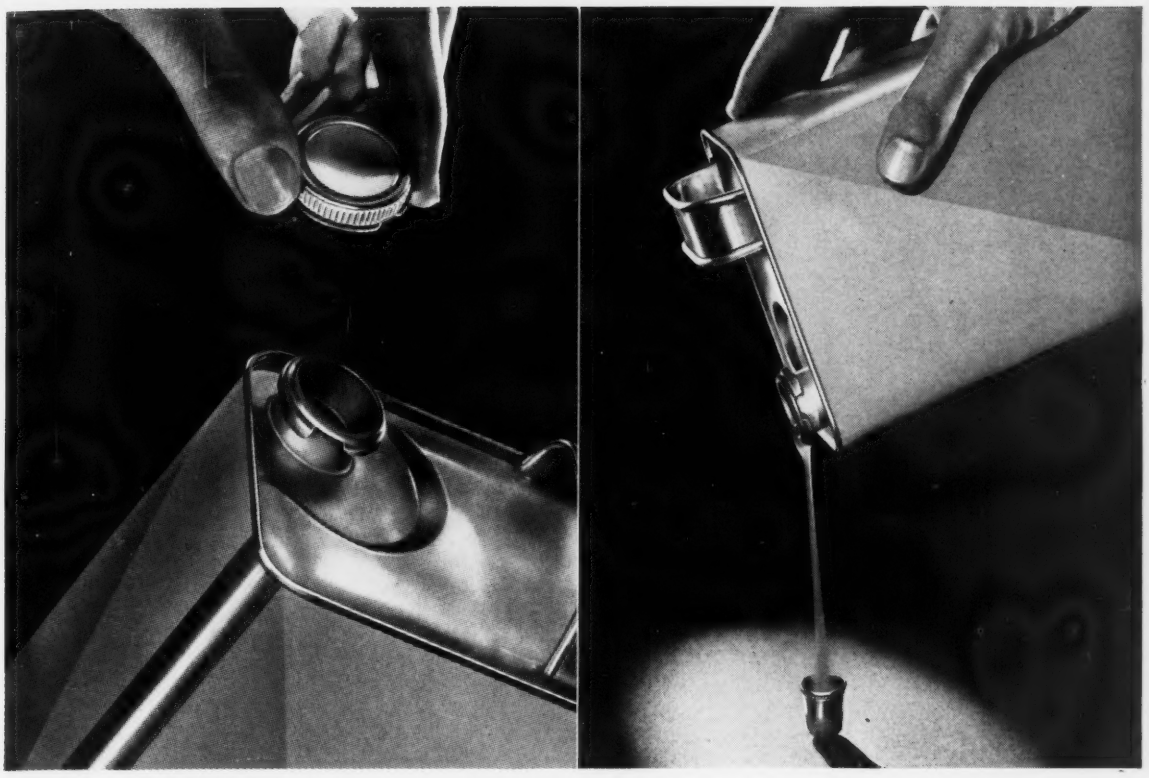
FROM-THE
TELTON-CHEMICAL-COMPANY



It *opens* . . . It *pours*

There you have the two big virtues of the Anchor Amerseal Can Nozzle and Cap. And both virtues are features of tremendous importance to you and to your customers.

WHEN a package opens easily, with a mere twist of the fingers, and replaces just as simply—users like it. Furthermore it is performing the function it should —building friends and good will for your products. When you can direct the stream of liquid from a can nozzle right into a thimble . . . that's pouring. Not only does the Anchor Amerseal Can Nozzle enable you to do this, but it is a free-flowing, non-dripping device that cuts off the flow of the liquid clean as a whistle.

You'll like Anchor's Nozzle and Cap for other reasons, too, such as the tight, secure seal it provides. But rather than attempt to explain it all in words, why not let us show you its many and various advantages and supply you with samples?

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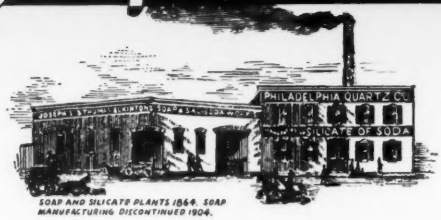
ANCHOR AMERSEAL CAN NOZZLES *and* CAPS

Experience required



SOAP AND SILICATE PLANTS 1864. SOAP MANUFACTURING DISCONTINUED 1904.

WHILE chemistry plays its important part in soap making, the judgment of your master soap boiler, based on his experience in the art, can be measured in dollars and cents.

We know his problems and yours from the best of schools — we were soap makers ourselves. P. Q. serves the industry with silicates of soda that reflect this background.

P. Q. Silicates of Soda, uniformly dependable good quality, bring out the best in any formula. That's why so many leading brands in bar, flake and powdered soaps specify a P. Q. Silicate. Our catalog now lists 33 different silicates.

We shall be glad to discuss with you formula or production problems; in strict confidence, of course.

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General Offices and Laboratory: 125 S. Third Street, Philadelphia, Pa. Chicago Sales Office: Engineering Building. Distributors in 60 cities. Plants at: Anderson, Ind., Baltimore, Md., Chester, Pa., Gardenville, N. Y., Kansas City, Kans., Rahway, N. J., St. Louis, Mo., Utica, Ill. Sold in Canada by National Silicates Ltd., Toronto, Ont.

ESTABLISHED 1831

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GRASSELLI TRI-SODIUM PHOSPHATE

GRASSELLI Tri-Sodium Phosphate is FREE FLOWING . . . because our process permits it to *cure*.

Non-Sifting Packages. Shipped to you in barrels with paper liner—no loss either in transit or storage. Also comes in kegs and bags. Grades—fines, flake, globular, medium and coarse.

Let us figure on your T.S.P. requirements. If you are in a hurry, call our nearest branch.

Let us quote you on—

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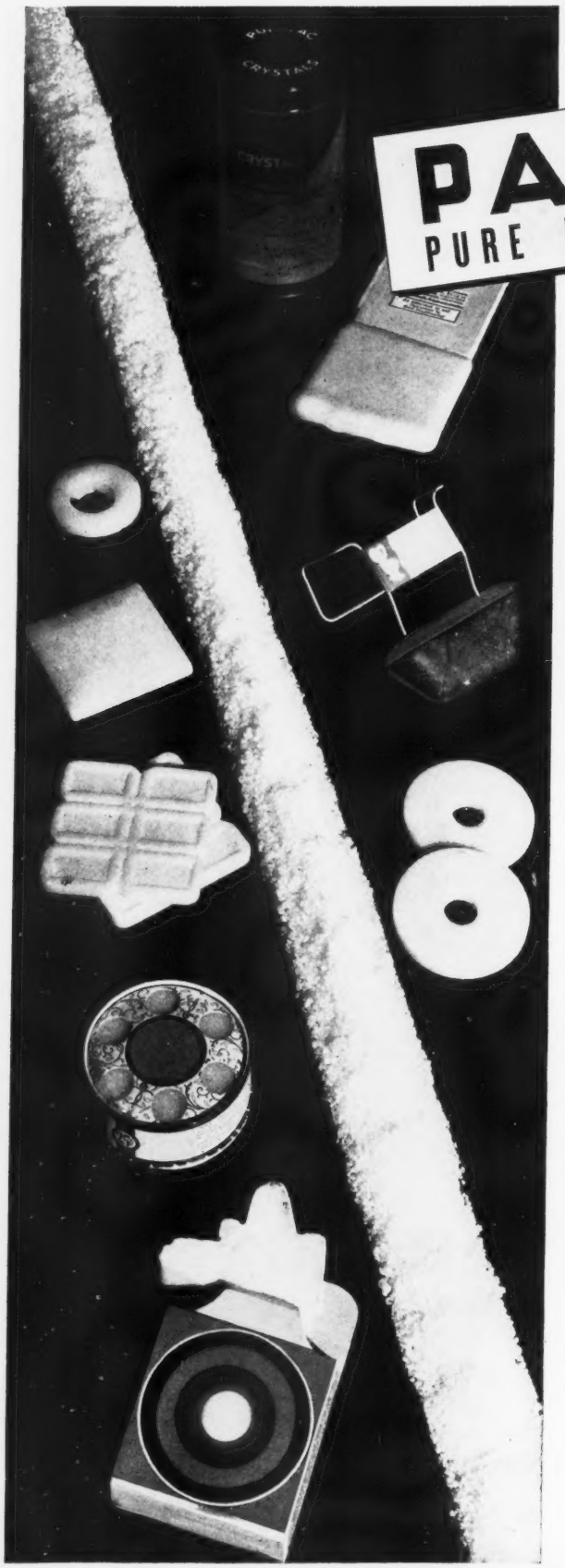

PARADOW
PURE PARADICHLORBENZENE

PARADOW, pure Paradichlorbenzene of highest grade, is a Dow product known throughout the trade for its remarkable free flowing properties and its adaptability for compression into distinctive forms.

Six sizes of pure snow-white crystals, each grade running uniform in size, make it possible to select the correct size and form for your packaging or manufacturing processes. We can also supply special size crystals in addition to the six standard sizes.

If you use paradichlorbenzene in any form, write for prices, stating the form in which you wish to use the materials. Samples on application.

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Coumarin	Caustic Soda
Methyl Salicylate	Carbon Tetrachloride
Methyl Anthranilate	Ethylene Dichloride
Phenol	Propylene Dichloride
Dowicides (Disinfectants)	Orthodichlorbenzene

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TRADE DOW MARK

Perfumes For

THEATRE SPRAYS

It makes no difference whether you use Alcohol, Alcohol and Water or Water alone as a base—we can furnish the proper perfume oil to produce an absolutely clear spray, without filtering. Furthermore, our perfumes will prove extremely popular with your customers.

Three Types

Standard Spray Odors for Alcohol Base Sprays	Special Spray Odors for Alcohol and Water Sprays	Super Soluble Bases for Water Base Sprays
$3.00 lb. in 1 lb. lots	$2.60 lb. in 1 lb. lots	$1.75 lb. in 1 lb. lots
2.90 lb. in 5 or 10 lb. lots	2.55 lb. in 5 or 10 lb. lots	1.70 lb. in 5 lb. lots
2.80 lb. in 25 lb. lots	2.50 lb. in 25 lb. lots	1.60 lb. in 25 lb. lots
Use 1 oz. to 1 gallon.	Use 1 oz. to 1 gallon.	Use 2 oz. to 1 gallon.

Obtainable in 20 different odors:

American Thistle	Geranium	Lily	Pine Forest
Apple Blossom	Honeysuckle	Mint	Rose
Bouquet	Jasmine	Narcissus	Trefle
Carnation	Lavender	New Mown Hay	Violet
Chypre	Lilac	Orange Blossom	Wild Flowers

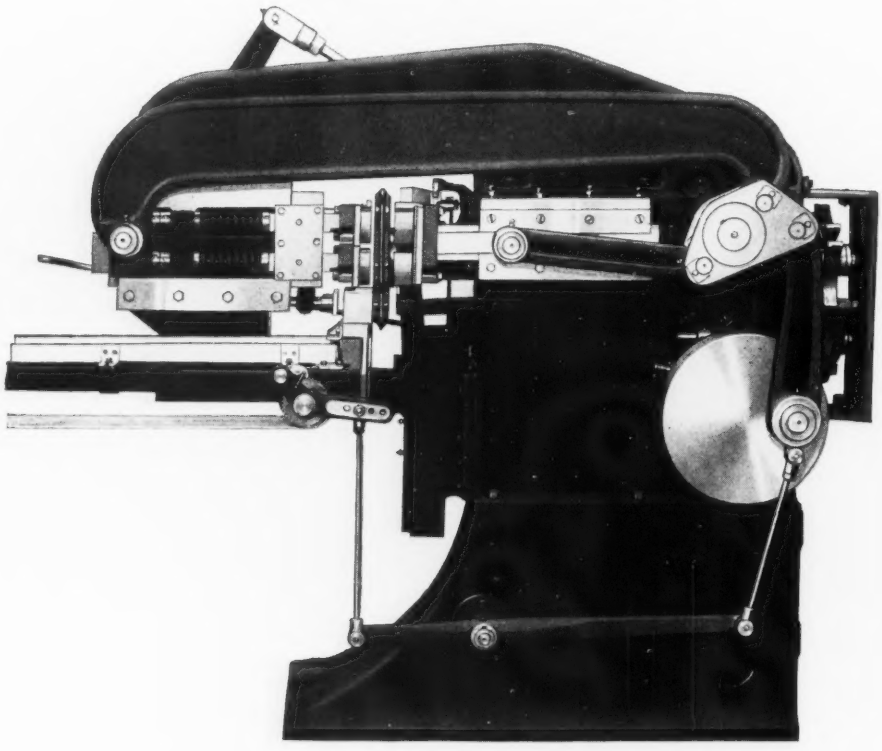
MEMBER NATIONAL INSECTICIDE AND DISINFECTANT MFRS. INC. 1914 INC.

P. R. DREYER INC.

12 E. 12th Street New York

"It's the Odor that Sells the Product"

JONES
Laundry and Toilet Soap Press
DOUBLE TOGGLE STROKE



TYPE K

This press in duplex form will produce 250 cakes of toilet soap per minute. It is supplied only in simplex form for laundry soap to press from 90 to 140 cakes per minute. The picture shows a duplex press arranged for toilet soap.

The pressing mechanism is of the TOGGLE TYPE and produces a powerful and most efficient stroke for pressing soap. The DIES travel RAPIDLY toward the soap with a gradually slowing motion, which reaches a minimum when delivering the full power just when the dies are on the cake.

A LONG DWELL of the DIES on the SOAP is a vital feature and one not obtainable with any other type of pressing mechanism. Making the second stroke the dies leave the surface of the soap about one-fourth of an inch and return under full power, BRINGING OUT THE LETTERING AND LINES perfectly. The soap then is ejected from die box into a take-off chute, where it is pushed from behind the die box by a positive mechanism.

FEATURES tending to give long life to the machine are: BALANCE—LACK OF VIBRATION AT HIGHEST SPEED—BRONZE BUSHINGS FOR PRINCIPAL SHAFTS—and ZERK OILERS THROUGHOUT.

FED AND RUN TO CAPACITY BY ONE OPERATOR

R. A. JONES & COMPANY, Inc.

P. O. BOX 485 CINCINNATI, OHIO

The Standardized *Constant Motion Cartoner* packages bottles, Jars, tins, collapsible tubes and many other articles. It feeds, folds, and inserts direction sheets and corrugated board liners with the loads

SOAP

Volume Eleven Number Twelve

As the Editor Sees It . . . .

RUMORS from Washington say that the Government is going to spend less money next year. This should be great news for the soap industry. All they will have to pay in the way of taxes in 1936 are three-cents per pound on coconut oil, et al, five per cent on toilet soaps, shampoos, and the like, federal corporation income tax of thirteen per cent plus, state corporation, income, sales, and luxury taxes. What a relief it is going to be to know that the Government is spending less, and at the same time to hear that the national debt will not go very far above thirty billion dollars.

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THE recent concerted effort to secure country-wide publicity in favor of the Guffey-Dockweiler Bill for the elimination of the excise tax on Philippine coconut oil by denaturation, did not work out altogether according to schedule. The backfire in several instances left the very distinct impression that perhaps more harm than good had been done by the efforts of the soap industry to influence editorial opinion in the daily press of the nation. The aftermath of the publicity campaign revealed that some newspaper editors are very touchy about the suggestions which are made to them. Others showed a complete lack of sympathy for the Philippines. Others indicated that they thought the soap industry had been asleep at the switch when the tax was passed. *The New York Herald Tribune* in a long editorial revealed no particular love for the soaper, but advocated removal of the tax "in the name of common decency."

All in all the kickback from the supposed attempts to mould public opinion were not particularly complimentary to the soap industry. It was for the *Chicago Tribune,* however, to place the crowning touch upon the entire proceedings. It seems that some soap makers were dumb enough to have communications sent to the papers by advertising agencies instead of sending them direct. And here is where the editors of the "world's greatest newspaper" took exception. Whether there was any inference in such a procedure, we do not know, but apparently the editors of the *Tribune* were able to perceive one —and acted accordingly. They publicly spanked the soap industry,—not for what it had done, but for the manner in which it was done. They pointed out that editorials inspired by advertising agencies would only act as boomerangs and would be discounted as hired testimony.

Now, with all due respect to the judgment of the *Tribune,* we do not believe that this obvious mistake on the part of the soap industry warranted public rebuke in a leading editorial. Ordinarily, we would be inclined to suspect that an editorial of this character might be a play to the gallery, rather than a sincere attempt to point out the error of the ways of the soap industry. It seems to us as though the editors went out of their way to make an issue publicly out of a procedure which they must know is quite common practice, even though it is granted to be very stupid practice.

Irrespective of the merit, or lack of it, of the *Tribune* editorial, the upshot of this whole publicity campaign has been to arouse the suspicion that the soap industry is interested in more than merely saving the Filipino copra producer from starvation. Even though right is unquestionably on the side of the soaper in the mind of those who know the facts, any just cause can be

bungled into defeat. A halt should be called while stock of the present situation is taken with a view to closer coordination of efforts and to preventing further mistakes.

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THE various and sundry attempts to wipe out "loss leaders" through legislation all seem to come to grief in the same way. They cannot stand up under a court test. Sometimes we wonder if the legal minds who prevail upon manufacturers to engage them to draw up and secure the passage of such legislation, really do not feel from the beginning that these laws never will be able to withstand a legal test. We grant that no manufacturer wants to see his nationally advertised brands sacrificed on the altar of the price cutter, but at the same time, these legislative abortions are quite obviously not the solution of his problem.

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THE first suit by a soap maker to test the validity of the excise tax on coconut oil, palm oil, and other imported vegetable oils, was filed last month in the Middle West. The application for an injunction in a U. S. District Court to restrain the Collector of Internal Revenue from collecting the tax, comes up for hearing just as we go to press. The contention of the soap manufacturer, as we reported it last month, that the coconut oil tax is unconstitutional because the money is collected for remission to persons other than the Government of the United States, is altogether valid according to legal authorities of the soap industry who were asked for an opinion. The allegation of the plaintiff in the same action that the excise tax on palm oil is likewise unconstitutional inasmuch as it discriminates against the soap industry in favor of the tin plate industry, is also held to be legally sound. On this basis, the possibility of the excise tax being declared unconstitutional does not appear as remote as previous general opinion had led us to believe.

If, after a year and a half in force, the excise tax were declared unconstitutional, we can readily imagine the confusion which would ensue in the soap industry. With raw material stocks on hand, some tax-paid and some unpaid, soap in process, and finished soap in warehouse and in the channels of distribution, the average soaper would hardly know where he stood. And imagine the complications attendant upon and during appeals to higher courts, and upon tax refunds if and when that stage should be reached. And even if Congress does pass the Guffey-Dockweiler Bill, this would apply only to subsequent transactions of Philippine coconut oil, and not to previous purchases of this oil, or to palm oil under any conditions. All in all, the situation has such great possibilities for becoming involved and complicated, that all the average soaper can do is to sit back and await developments.

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OLIVE OIL castile soap as a synonym, and all reference to olive oil in connection with soap have been eliminated from the United States Pharmacopoeia. The new U. S. P. XI which will be issued shortly, and which becomes effective next June first, substitutes merely U. S. P. Hard Soap for what was formerly U. S. P. Castile Soap. The term, olive oil castile soap, has been dropped from the Pharmacopoeia, according to the revision committee, because "there was no known method whereby compliance with this specification could be proven." There now remain U. S. P. Soft Soap, made with linseed oil, unchanged as specified in the U. S. P. X, and Hard Soap, a pure soap of high quality suitable for the preparation of soap liniment.

In dropping the synonym, olive oil castile soap, from the U. S. P., the revision committee evidently takes cognizance of the court decision in the case of the Federal Trade Commission versus Kirk, the famous castile soap litigation which dragged through the United States Courts for eight years. When this case was finally settled, the term castile soap had been stripped legally of any meaning which it might have had. Its elimination from the new Pharmacopoeia appears to be a logical step under the circumstances.

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SUCH estimates as have been reported, indicate that the tonnage of soap production in the United States for 1935 will probably fall about ten per cent below the figure for 1934. In view of the generally higher soap prices which have been in effect this year, this reduction in tonnage is not unexpected. Contraction in consumption, and the substitution of other products where possible, is the inescapable result of higher prices. For the soap industry, this is particularly true in the case of soap products which are consumed in laundries, textile plants, and other industrial establishments. The value of soap production in 1935 is estimated to be some twenty per cent over last year,—a direct reflection of higher raw material costs, and no surprise to the industry.

There is one phenol. There are three cresols. There are six xylenols.

Phenol (carbolic acid) is C_6H_5OH.
Cresols (cresylic acid) are $C_6H_4CH_3OH$.
Xylenols (dimethylphenols) are $C_6H_3(CH_3)_2OH$.

Is the term "carbolic soap" to be limited to phenol or do the cresols and xylenols qualify as carbolic? Dr. Thomssen gives the answer.

What Is CARBOLIC SOAP?

By DR. E. G. THOMSSEN
J. R. Watkins Company

CARBOLIC soaps have had more attention and greater publicity recently than for a period of years. This condition has been largely occasioned by the litigation that has been instituted to protect the color, and odor, shape, and use of word "health" by a manufacturer of a large selling brand of this type of soap. These novel attributes, it is contended, have so greatly popularized the brand that it has been a leader with toilet soap users for a period of years. In another recent decision, the Court has upheld this manufacturer in his assertions as referring to this particular brand of carbolic soap.

When an article becomes publicized, it is only natural that government and state administrative bodies prick up their ears and examine more closely the claims made for it. In the case of carbolic soap, it is an easy matter to pick flaws in claims as the manufacturers usually attempt to profit by the medical and antiseptic properties of the phenol added to the soap. These bring them under various pure food laws.

In a recent case which came intimately to my attention, a chemist in a regulatory department (not the federal) took exception to the use of the terms "carbolized" and "carbolated" which were stamped into each cake and which were used in the advertising matter accompanying each bar. The attitude of this official, who was very technically minded, was at least temporarily supported by the chief of the department. This led to some interesting discussions as to what constitutes a carbolic soap.

The soap in question contained about 0.1 per cent phenol, the other 3.4 per cent of phenolic bodies consisting of cresols, xylenols and some higher homologs. It was the contention of the regulatory chemist that a content of 0.1 per cent phenol constituted no more than a mere flavor and the soap could hardly be considered as a carbolic soap. When it was pointed out that the manufacturer considered the higher phenols in the same category as phenol itself, the department still insisted that the chemical nomenclature was stretched. It was being attempted to make it fit in with popular phraseology, especially when a soap containing only 0.1 per cent phenol, the rest being cresols and xylenols, was termed "carbolic." The department's contention was that to call a soap a carbolic soap and make the medicinal and germicidal claims of carbolic acid it should contain from 5 per cent to 20 per cent phenol. There was, therefore, no injustice in the ruling, according to the superior officer.

From a strictly technical standpoint, this contention is true. There are, however, other details and facts which brought a reversal of ruling in this case. It seems, therefore, that the question of what constitutes a carbolic soap should be defined and given attention by soap chemists. This is especially true since the Courts

are deciding in what manner this soap may be merchandised.

There is also the possibility that at some time, another regulatory department may raise this technicality. It will be remembered that a few years ago considerable litigation and hearings resulted when the Federal Trade Commission defined and limited the use of "castile" to soaps made from olive oil. It was a costly procedure for several soapers, even though the Commission eventually lost its case.

It may be pointed out strongly that the substitution of higher phenols in carbolic soap for phenol is not done for any purpose of deception. Cavel,[1] in investigating the antiseptic value of soap to which phenol was added in comparison with certain essential oils and aromatics, found phenol was far down the list. Oil of thyme which contains higher phenols was antiseptic at a dilution of 0.7 parts per 1,000 against a beef broth medium infected with water taken from a collecting tank of a sewerage system, while phenol required 5.6 parts per 1,000 to inhibit bacterial growth. In other words, phenol was about 1/8 as effective as oil of thyme under the conditions employed.

It has also been shown in preparations on the order of U.S.P. Compound Solution of Cresol, which requires soap to emulsify cresol when diluted with water, the higher the molecular weight of the phenols used, the higher is the phenol coefficient and the less poisonous is the preparation. These characteristics have bees made use of in the manufacture of general antiseptics for household use. Lysol may be cited as an example. They have also been adapted in the case of coal tar stock dips which consist of a mixture of coal tar acid oils combined with rosin soap. These dips readily make a stable emulsion with water. A few years ago, the phenol coefficient of these preparations averaged around three. Today the average is around five. This increase in the germicidal value as compared to phenol by the Rideal Walker Method or its modifications has been occasioned by increasing the boiling point in the distillation of the tar acid oil of U. S. origin, as well as the addition of high boiling tar acids derived from Scotch coal tar. These Scotch acids have phenol coefficients running as high as 100 or greater.

Thus, when the soap maker substituted the higher homologs in his soap base for phenol, he did not do so to deceive the consumer and offer an inferior product against which the pure food laws protect. He improved upon technically correct termed carbolic soap by increasing its germicidal value and at the same time lessening its poisonous qualities. He furthermore introduced bodies which are more stable in soap than phenol.

IN laying down specifications for a product which comes under the edict of the pure food laws, it is customary to refer to current contemporary scientific opinion. In the light of this, let us consider the definitions of "carbolic soap" by authors of the more recent works on soap. Geoffrey Martin[2] states "its (phenol's) incorporation with soap, which has taken the name of carbolic soap, has been very extensive."

"A toilet soap should not contain more than 3 per cent of pure phenol. . . . Some disinfecting soaps have contained 5 per cent. . . . "

"Unna states that all carbolic soaps without exception are . . . quite unreliable, useless preparations; it is entirely due to the volatile nature of the carbolic acid and not the falt of the manufacturers. Carbolic acid . . . boils at 182°-183°C."

Meerbott-Stanislaus[3] state "Carbolic Soap. I-milled white stock soap 80 pounds, chemically pure phenol, 2 pounds, stirred up in potash solution, 2 pounds.

"II—Cold stirred-coconut oil, 40 pounds, caustic soda lye of 38°Be, 20 pounds, chemically pure phenol dissolved in potash lye, 26 ounces and glycerine, 3½ ounces."

Thomssen[4] says: "Phenol (Carbolic Acid) is most extensively used in soaps of this kind which are called carbolic soaps. . . . The cresols are also extensively used for making soaps, namely carbolic. These substances impart more odor to the soap and really have more disinfecting powers than phenol when incorporated in soap."

E. T. Webb[5] states: "In the case of carbolic soaps, it is necessary. . . . Crude cresylic acid is added as required, and the amount added may vary from 3 to 15 per cent." The implication in this case is that cresylic acid replaces phenol in carbolic soap.

William H. Simmons[6] comments thus: "Carbolic acid (soap) is also a fairly popular medicated soap. It usually contains a mixture of carbolic and cresylic acids, the total amount of which should not exceed 3 per cent in a soap intended for toilet purposes, as larger quantities are liable to cause irritation of the skin."

From these references it is evident that the majority of authors of books on soap manufacture recognize a carbolic soap as one containing cresols or cresylic acids. Soap manufacturers themselves seldom write books on soap. If they were to express their opinions it undoubtedly would be true that even a larger majority would recognize the cresols, etc. as being suitable and preferred carbolic soap additives.

In view of these conditions, it seems pertinent that a carbolic soap or one designated as "carbolized" or "carbolated" may be re-defined. Our suggestion is that this definition be used:—*A soap described as carbolic soap shall contain at least* 3 *per cent phenol or the higher homologs of phenol, calculated as cresol. Redistilled commercial cresylic acids (tar acids) may be used provided they do not increase the coal-tar hydrocarbon content of the soap to more than* 0.5 *per cent.* A generally recognized scientific definition of carbolic soap will undoubtedly prove of value to the soap industry.

1. Comptes Rendus, 166 (1918) p. 827.
2. The Modern Soap and Detergent Industry (1925) II, p. 11.
3. American Soap Makers Guide (1928) p. 513.
4. Soap Making Manual (1922) p. 77.
5. Modern Soap & Glycerine Manufacture (1927) p. 78
6. Soap (1928) p. 88.

Quality Evaluation of

Shoe Polishes and Cleaners

By VLADIMIR TUMA

IRRESPECTIVE of what the composition of any particular shoe polish or dressing may be, the practical consideration of its appearance and behavior under actual conditions of wear remains of paramount importance. It is, of course, quite well known that a certain combination or even preponderance of ingredients will produce more or less definite results (that is in so far as color, gloss, and permanency of applications is concerned), but for the purposes of accurate comparison, it is not always possible for the average technologist to deduce these expected results on the basis of a quantitative chemical analysis alone. Such deductions usually remain for those who have specialized in the manufacture and analysis of shoe polishes and dressings, and even then it is extremely doubtful whether the ultimate deductions can be considered as being truly representative of the actual conditions and certainly any such deductions are far from quantitative in their nature. Chemical analyses supplemented with practical tests are far more desirable, but the quantitative evaluation of the results of practical tests was far from satisfactory until quite recently.

It is the purpose of this paper to outline a method of evaluating the results of various practical tests to a high degree of accuracy and to show by actual examples some possibilities offered by this type of quantitative evaluation. Whatever practical test may be used, the ultimate interpretation of the test results must be based on a study of an untreated leather or fabric surface in direct comparison with similar surfaces treated with standardized test methods. In so far as the ultimate consumer's viewpoint must be used as a criterion, the test results should be capable of interpretation in terms that the consumer will readily understand. In this respect there is but little doubt that the quality and the permanence of the color and the gloss of any one particular shoe polish or dressing are the most important factors in the consumer's consideration. All test results obtained with the aid of the method outlined in this paper may

readily be interpreted in just such terms, as will be shown concretely in the following paragraphs.

Without going into any lengthy discussion of the theory of light and color, it should suffice to consider color and gloss as definitely measurable characteristics

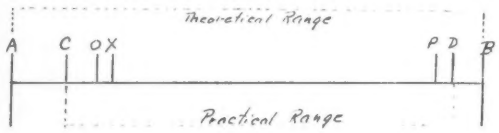


Fig. I.

of the light-reflecting or light-absorbing capacities of any particular opaque surface. From the viewpoint of color alone, an absolutely black surface is one which absorbs all the light which falls upon it from some external source, while an absolutely white surface, on the other hand, is one which reflects all the light which falls upon it. These two colors may, there, be considered as representing the maximum and minimum limits of light reflection or light absorption. For the purposes of our discussion these two colors have been termed the "absolute black" and the "absolute white" and the limits of light reflection that they represent the "theoretical limits", while the entire range of light reflection limited by them has been termed the "theoretical range" of total light reflection.

Graphically the theoretical limits may be represented by A and B in the following simple diagram:

In Fig. I, A represents 100 per cent light absorption and 0 per cent light reflection, whereas B represents 0 per cent light absorption and 100 per cent light reflection—that is, A corresponds with the absolute black and B corresponds with the absolute white. All other colors lie somewhere between these two theoretical limits, their exact position depending, of course, upon the amount of light reflected or absorbed from the surface to which they have been applied.

Fig. II.

From the practical viewpoint, the absolute theoretical limits of light reflection have been extremely difficult to attain and it, therefore, becomes necessary for us to consider the nearest practical approaches to these limits as our working limits. These limits, represented by C and D in Fig. I, have been termed the "practical limits" and must of necessity lie somewhere between the theoretical limits, and the range of light reflection that they limit has been termed the "practical range" of total light reflection. For purposes of greater ease of manipulation in calculations these practical limits C and D are considered as possessing the power of absorbing 100 per cent of the light and of reflecting 100 per cent of the light respectively.

It is, of course, quite evident that the ultimate goal for the black color in shoe polishes and dressings would be the practical limit C, while that for the white color would be the practical limit D, when color alone is considered. These limits are actually attainable for some types of surfaces but may not necessarily be attainable for leather or fabric surfaces coated with shoe dressings or polishes, because of the counteracting effect of gloss, lack of a sufficiently smooth surface, effect of pigment particle size in the applied coating, etc.

Gloss, as a characteristic of any particular surface, must also be considered as a matter of light reflection. It is the characteristic directly attributable to the smoothness of the surface, and as the gloss increases so also increases the amount of light reflection. Disregarding for the time being the question of color, it is apparent that any increase in gloss will approach graphically toward the practical limit D while any decrease in gloss will approach toward the practical limit C.

Fig. III.

In view of the fact that gloss is a highly desirable attribute of many shoe polishes and dressings, it is evident that we have to consider the counteracting influence of two highly desirable attributes. In the case of a black shoe polish, for example, the desired limit for color will approach toward C while the desired limit for gloss will tend to approach toward D, the net result being probably at some point O (Fig. I.). In the case of white shoe dressings the gloss does not, as a rule, play as important a role as in polishes and dressings of other colors and the net result of the effort toward a perfect white color and maximum gloss may be near P, depending upon the actual stress being placed on the gloss.

A careful study of these very brief theoretical considerations readily discloses the fact that by actually measuring the amount of light reflected from any surface it is possible to obtain very definite figures which will indicate the *composite value* of the color and gloss, figures which can be used as a very definite criterion of value and figures which are invaluable to the technologist who is endeavoring to improve the color or gloss of any particular product.

As a theoretical example, let us consider a shoe polish that will give a total reflection value of X. A study of Fig. I, indicates that color may be improved by reducing the amount of total light reflection so that it tends to approach toward the practical limit C, while gloss may be

improved by increasing the amount of total light reflection so that it tends to approach toward the practical limit D. Let us assume further that in experimenting with such a shoe polish both the gloss and color had been improved, but the color had been improved to a greater extent than the gloss. If we represent the extent of these improvements graphically with "a" and "b" respectively, then the net result of these two opposing improvements will be a decrease in the total reflection value (hereinafter designated as "reflection factor") to some point Y, as shown in Fig. II.

If, on the other hand, "b" is greater than "a" the net result will be an increase in the reflection factor to some point Z, as shown in Fig. III.

Finally if both "a" and "b" are equal the net result will be zero and the reflection factor will remain at X.

It is thus apparent that in undertaking a modification of any particular product it is essential to have a very definite conception as to what the *net result* of the proposed changes is to be, that is, whether it is preferred to increase or decrease the reflection factor, and then direct the improvement along the desirable channels. This, of course, is purely a matter to be decided by the manufacturer and should be determined by him on the basis of accepted practice.

Reflection factors may be obtained quite readily with the aid of a well designed reflection meter using photoelectric cells as the sensitive elements. Several excellent types of such meters are now available commercially, but of these the writer believes the A.P.C. Reflection Meter[1] to be the most suitable and most economical for the work outlined herewith. With this instrument definite values for total reflection may be read directly on a specially constructed slide wire bridge so calibrated that the best available black gives a reading of 0 (corresponding to the practical limit C), while the best available white gives a reading of 1000 (corresponding to the practical limit D). These practical limits are obtained by calibrating the instrument against a block of pure magnesia for the white, that is, for the value of 1000, and against a surface of chemically pure lamp black for the black, that is, for the value of 0. It is thus possible to read reflection factors to 1/10 per cent with absolute accuracy.

The reflection factors obtained with the aid of this or similar instruments form the actual basis for further study and are particularly suitable for comparative work. It should go without saying that any research conducted along these lines must be undertaken with standard materials. For evaluating, for example, any particular shoe polish or dressing, a leather or fabric must be chosen which is equivalent to that to which the polish or dressing is to be actually applied and great care must be exercised to choose such a leather or fabric which may at all times be easily duplicated. Once having chosen a "standard leather" or "standard fabric," its reflection factor is determined, successive applications of the shoe polish or dressing are made, and the reflection factor after each application is determined. This may best be illustrated by the following data, representing the re-

flection factors obtained for well known brands of black shoe dressings. (2)

Table I

Reflection Factors:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
Standard Leather	4.3	4.3	4.3	4.3	4.3
After 1st application	4.5	4.0	4.3	4.6	4.0
After 2nd application	3.7	3.9	3.8	4.1	3.8
After 3rd application	3.5	3.9	3.6	4.0	3.5
After 4th application	3.5	3.8	3.5	3.8	3.4
After 5th application	3.5	3.8	3.5	3.7	3.4

Data such as the above may be used further to obtain very definite figures of the percentage increase or decrease of the composite value of color and gloss with each application by converting the reflection factors to a basis of "blackness." Keeping the theoretical considerations in mind, it is evident that any increase in the reflecting power of a coating is really a reduction of the actual "blackness." The practical black having been taken to represent 100 per cent light absorption, it is, therefore, possible to conceive the black color in these terms. That is, a practical black is considered as a 100 per cent black. A black, therefore, which reflects 1 per cent of the light which falls upon it can be considered as being only a 99 per cent black. Data such as is presented in Table I may thus be converted to terms of "blackness" by the use of a simple formula:

$$\text{Blackness} = 100.0\% - R$$

in which R is the reflection factor for any particular surface. The data of Table I may thus be rewritten:

Table II

Blackness:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
Standard Leather	95.7	95.7	95.7	95.7	95.7
After 1st application	95.5	96.0	95.7	95.4	96.0
After 2nd application	96.3	96.1	96.2	95.9	96.2
After 3rd application	96.5	96.1	96.4	96.0	96.5
After 4th application	96.5	96.2	96.5	96.2	96.6
After 5th application	96.5	96.2	96.5	96.3	96.6

While relatively of the same order as the figures of Table I, the figures of Table II are much easier to study in that they relate directly to the applications in terms of black color. It is, therefore, much easier to visualize which of any given samples may be the most efficient according to any standards which may have been established.

It should also be very evident that from a tabulation such as the above further very definite data may be derived as to the actual decrease or increase in the reflecting factors—which, as has already been pointed out, is the composite reflection value for both the color and gloss. For this purpose use is made of the following formula:

$$CC = Ba - Bs$$

in which CC is the color change, Ba the "blackness" after any particular application or treatment, and Bs is the "blackness" of the standard leather. While this formula is extremely simple, care must nevertheless be exercised to take into consideration the algebraic sign in performing the calculations. All positive values indicate an increase in the "blackness," while all negative values indicate a decrease in the "blackness." On this basis the preceeding table will yield the following percentages of color changes:

Table III

Color Changes:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
After 1st application	—0.2	0.3	0.0	—0.3	0.3
After 2nd application	0.6	0.4	0.5	0.2	0.5
After 3rd application	0.8	0.4	0.7	0.3	0.8
After 4th application	0.8	0.5	0.8	0.5	0.9
After 5th application	0.8	0.5	0.8	0.6	0.9

These color changes, however, are only apparent color changes in that they have been based on a 100 per cent black. They must, therefore, be converted to actual color changes by using the blackness of the standard leather as a basis for calculation. The following simple formula may be used for this purpose:

$$AC = \frac{CC \times 100}{Bs}$$

in which AC is the actual color change, CC is the apparent color change as first determined (from Table III), and Bs is the blackness of the standard leather (from Table II).

In the particular examples cited above the actual color changes are identical with the apparent color changes if calculations are carried out to only one decimal point, there being no logical need to carry out the calculations any further as the original figures are reported only to one decimal point. It is only after the apparent color change is greater than 1.0 per cent that the actual color change will differ from the apparent color change. (This, however, holds only for this particular set of figures as later examples will show conclusively.)

In the case of white shoe dressings (as applied to white leather in this case) exactly the same procedure is followed, although the reflection factors will now lie near the other extremity of the practical range of total light reflection. This is aptly illustrated in the following tabulation of reflection factors for five well known brands of white shoe dressings.

Table IV

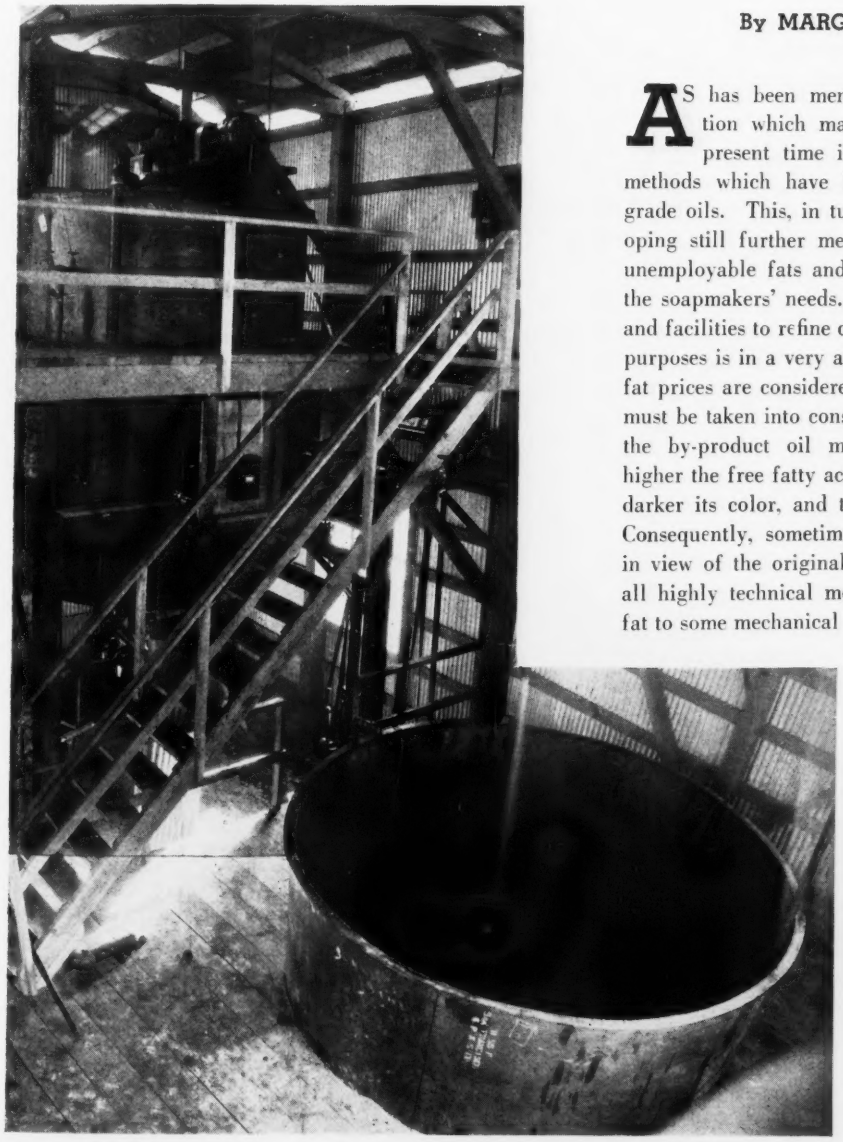
Reflection Factors:	*Sample* 40 %	*Sample* 46 %	*Sample* 47 %	*Sample* 49 %	*Sample* 50 %
Standard Leather	90.8	90.8	90.8	90.8	90.8
After 1st application	93.1	94.1	92.1	91.1	95.0
After 2nd application	94.0	94.8	95.0	91.3	95.1
After 3rd application	94.2	95.2	96.1	91.6	95.1
After 4th application	95.0	95.2	96.3	92.1	95.1
After 5th application	95.2	96.4	96.4	92.3	95.1

In view of the fact that we are now considering color near the other extremity of the practical range of total light reflection, the reflection factors may be considered directly as percentages of practical white. That is, for example, the standard leather used above may be considered as being a 90.8 per cent white. Table IV can, therefore, be rewritten to read direct percentages of "whiteness" merely by affixing the percent sign to the figures for reflection factors.

(*Turn to Page* 127)

Competition forces the soap maker further into the field of recovered low-grade fatty raw materials. This is the second of a series of two articles discussing the trend in oil and fat requirements of the modern soap industry.

The Search for By-Product Fats



By MARGARET J. HAUSMAN

AS has been mentioned before, the keen competition which many soapmakers are facing at the present time is due in no small degree to the methods which have been developed for refining low grade oils. This, in turn, should actually lead to developing still further means of refining so that otherwise unemployable fats and oils may be stepped up to meet the soapmakers' needs. The manufacturer with the skill and facilities to refine cheap fatty by-products for his own purposes is in a very advantageous position when present fat prices are considered. The cost of refining, however, must be taken into consideration in order that refining of the by-product oil may be warranted. Usually, the higher the free fatty acid content of the grease or oil, the darker its color, and the higher is the cost of refining. Consequently, sometimes it well pays the manufacturer in view of the original cost of the fat, to dispense with all highly technical methods, and merely to subject his fat to some mechanical process such as settling or boiling,

◆

Soap makers with the skill and facilities to refine cheap fatty by-products for their own purposes are in a very advantageous position in the matter of raw material costs when the present general level of fat prices is considered, the author states here.

and then so work his soap as to get the best possible result.

The ordinary methods of refining consist of coagulation and settling, bleaching, deodorizing, neutralization, distillation, esterification, treatment with solvents, separation of stearine, and hydrogenation. If the oil is not of too poor a grade, and does not require chemical treatment, or else if it does not warrant the application of more elaborate methods of refining, the process of coagulation and settling may be applied with satisfactory results. Oil may be so treated in the original state or after it has been boiled with water or brine and allowed to settle. By vigorously stirring 1½ per cent to 3 per cent of water into the oil at 40° to 60°, without forming an emulsion, or by using an 0.01-0.03 per cent solution of alum or of 0.001-0.002 per cent of sodium hydroxide instead of water, mucilaginous matter can be coagulated and the precipitate removed by centrifuging, filtration, or settling.

Bleaching may be effected by treatment with diatomaceous earths or carbons. It as been found that treatment of oils with per-compounds at below 75° enables subsequent bleaching by adsorbents to be more effectively carried out. The presence of small quantities of soap or free sodium hydroxide left in an oil from refining will diminish the bleaching capacity of fuller's earth and may even darken some oils. Spent filter cake, like that containing fuller's earth, can be mixed with water, the mixture heated, and subjected to pressure to convert fats present into fatty acids, the water being subsequently removed by evaporation. The fatty acids are then extracted with a solvent, and the solvent evaporated from the acids.

Bleaching may be carried out by the application of oxidizing or reducing agents. Exposure to air or blowing air through an oil also provides an effective method of bleaching some oils. Soap stock may be treated with hydrogen peroxide in non-alkaline condition and excess peroxide may be decomposed after bleaching is completed. Bleaching with hydrogen peroxide is particularly effective in the case of olive oil foots. Common methods of bleaching by oxidizing agents, in addition to air-bleaching and the peroxide method, consist in exposing the fatty material to light, or using chemical agents such as sulfurous acid, sulfuric acid, potassium dischromate together with acid, and lye. Lye is used rather extensively for bleaching linseed and cottonseed oils for use in dark soft soaps, and where there is a considerable demand for such soaps, this method is economical. These bleaching treatments are generally only used when treatment with bleaching earths or carbon fails to remove the color as much as might be desired. Soap containing fat which has undergone extreme bleaching by oxidizing agents does not keep as well as that made from fats of ordinary purity.

Deodorizing as well as decolorizing can be carried out by heating and blowing superheated steam through the oil after the oil has been heated to a fairly high temperature. Bleaching earths and carbons absorb odors quite effectively. Some oils are freed from objectionable odors and tastes by treating them while hot with some substance which will split off gases or vapors, such as oxygen, ammonia, carbon dioxide, and so forth. Substances of this type are ammouium carbamate, ammonium carbonate, ammounium nitrite, various organic and inorganic peroxides, and others as well. During evolution of the gas, a current of steam, ammonia, or carbon dioxide may be passed into the oil. Otherwise the oil may be submitted to steam treatment in a vacuum after deodorization.

The neutralization method consists in converting the melted fat or oil to soap with a slight excess of strong aqueous caustic soda solution, and allowing the mixture to separate. The purified oil rises to the surface and is washed with water to remove soap, caustic, and other impurities, and is ready for whatever processes of decolorization and deodorization that are to be used. It has been claimed that treatment of oil seed with gaseous ammonia during solvent extraction removes fatty acids, and that alcoholic ammonia is particularly useful in the case of oils containing considerable quantities of free fatty acids.

The free fatty acids in oils and fats can be safely reduced to 0.5 to 0.2 per cent by distillation; if it is attempted to reduce the fatty acid content beyond this point, splitting of the fat takes place.

In esterification of free fatty acids with glycerol for refining an oil or fat, an equilibrium is reached, and the process is incomplete. The unsaturated fatty acids contained in low quality animal and vegetable oils can be esterified with an aliphatic alcohol and polymerized by heating to about 200-300°, but not to the boiling-point, passing through the oil a current of inert gas with or without pressure, if desired. The polymerized substances can then be split and the fatty acids recovered.

As far as solvent treatment for purification is concerned, alcohol is not very satisfactory inasmuch as it dissolves neutral fat along with the fatty acids. At the present time, mixed solvents, such as alcohol and glycerin, are under investigation.

Separation of stearine is often considered as a means of refining vegetable oils. This can be accomplished by cooling the oil to the proper temperature and separating the solid stearine by filtering or settling. A method has recently been developed for separating high-melting fats such as stearine by diluting the oil with a liquefied solvent, some substance which would ordinarily be gaseous. The withdrawal of a portion of the solvent as vapor cools the remaining solution to a temperature sufficiently low to cause crystallization of the high-melting fats. The solvent can be recovered. Stearine can be separated from an oil also by diluting the oil with hydrocarbon mixtures and keeping it at a low temperature. These latter methods have been patented.

The introduction of hydrogenation in 1910 greatly revolutionized the oil, fat, and soap industry. It has permitted modifications which have imparted properties to oils that enable them to fulfill certain requirements for which they would otherwise be unfit. Although hydrogenated fats have not actually been used very extensively in the past in soaps, their extensive use for edible purposes has materially affected the raw material market of the soapmaker.

The addition of hydrogen converts liquid fatty acids to solid ones, at the same time taking away undesirable odor and color by chemically changing the substances present in the oil. Particularly notable in this connection is the effect of hydrogenation on fish oils, which unless subjected to this treatment could not be used for soapmaking on account of their strong undesirable odor. Hydrogen, however, seems to combine with unstable odorous nitrogenous substances in these oils, transforming them into stable odorless compounds. On account of the fact that hydrogenation improves the consistency of fats for soapmaking, the process puts a wide range of potential soapmaking materials which some day may be needed, at the disposal of the soapmaker. Usually liquid oils are not desirable for soapmaking purposes, as has been explained above. The hydrogenated, hard fats can however be mixed with other softer fats to arrive at a combination that will give the desired consistency and lathering properties in the finished soap.

Hydrogenation of various combinations of peanut oil, coconut oil, castor oil, cottonseed oil, and linseed oil can produce a fat closely resembling animal tallow, but at the present time such a product is too expensive to be of commercial value.

Various other methods of refining have been and are being inaugurated, with more or less success. A continuous method for refining oils claims a reduction of loss of free oil in foots of about 30 per cent below that encountered in the ordinary batch methods. This method employs an instrument for proportioning two continuously flowing liquids to each other, a mechanical mixer, a suitable heater for quickly raising the temperature of oil and alkali, and high-speed centrifugal separators which continuously separate neutral oil and soap stocks.

An improvement on the old methods for refining crude cottonseed oil consists in heating the oil together with a small percentage of anhydrous solid glyceryl or glycol borate. In this manner the mucilaginous matter is removed and a permanent decolorization is stated to be obtained. A considerable amount of work has been done on refining oils with phosphoric acid, and numerous patents have been taken out on processes of this kind.

A process has been developed for freeing animal and vegetable oils from mucilaginous and other impurities by treating the oils with dilute hydrochloric acid and a solution of a metal chloride, added together, or one after the other, at not more than 50°. In addition to the caustic soda method as a way of refining oils by treatment with alkali, there is another method now in existence which employs liquid ammonia. Variations on the ordinary method of treatment with caustic soda have come into existence as well.

In addition to the methods devised for the production of more highly refined fatty acids, ways and means are being studied for the preservation of fats and oils. Soap made from oils of low grade have a tendency to turn rancid quickly. It has been claimed among others that rancidity in soaps comes from oxidation or like effects on the free fatty acids present in the soap. The effects of low grade oils in soaps may manifest themselves in various ways, among them being spotting or other color changes, the development of disagreeable odors, and complete rancidity. It has been found that certain oi's, among them hydrogenated and unhydrogenated cottonseed oil, can be stabliized against rancidity by the addition of 5-10 per cent of sesame oil that has been hydrogenated to the consistency of the material being treated.

Another method for the prevention of oxidation consists in the addition of a carotinoid pigment obtained from carrots or alfalfa leaves, or a substance like palm oil that contains the pigment. This pigment is added together with enough alkali to neutralize whatever free fatty acids may be present in the oil. Then caustic soda is added and the mixture is heated to a temperature between 100° C. and the decomposition temperature of the fat. This heat treatment decolorizes the oil. It may be carried on together with or followed by a purification treatment with alkalies, filtration through some bleaching agent, deodorization or hydrogenation. It is interesting to note that in hydrogenation the carotinoid pigment acts as a catalyst. According to a German patent, rancid oils and fats can be restored by treating them with aldehydic or ketonic precipitants, such as hydroxylamine, semicarbazide, hydrozin, and the like and then filtered, since rancidity is supposed to consist in the formation of free aldehydes and ketones. Rancidity can be prevented in cold-processed or semi-boiled toilet soaps by the addition of 0.24 per cent of sodium thiosulfate in aqueous solution.

To treat the soap in the soap kettle in different ways with a view to stabilizing it, is not advisable. Unexpected changes might possibly take place, with ill effect, and so it is safer to treat the charging materials rather than the finished product. There is a method, however, whereby soaps can be hydrogenated to harden, deodorize, and bleach them by the production of nascent hydrogen in the presence of the fatty molecule itself, by mixing the soap pulp, while it is in the alkaline condition, with aluminum or zinc in an appropriate form.

The search for new raw materials for soapmaking is now heading in the direction of obtaining fatty acids by the oxidation of hydrocarbons and preparing synthetic fats. The drawback in commercializing fatty acid production by means of oxidation of hydrocarbons lies in the difficulty of controlling the process of oxidation. The

(*Turn to Page* 63)

SHAMPOOS

THE literature is so full of formulas for shampoo liquids, both good and not so good, that specific definite recommendations will not be advanced. The ideal in shampoo should not only lather abundantly, but should cleanse both the hair and the scalp thoroughly. It should rinse easily and completely, leaving the hair soft and lustrous and not dry, dull and brittle. The lye used may be straight potash, although some soda may be found advantageous in certain formulas.

Claims by various authorities for the use of soda lye include: (a) The soda soap keeps the solution clearer after filtration. (b) It tends to exert a retarding effect on the hydrolysis of potash soap. (c) It retards the development of rancidity. (d) It appears to improve lathering properties. Never having suffered these troubles, the efficacy of the remedy for them has not required proving to date. Accordingly, they are enumerated without comment. In the average formula, the potash lye should predominate. Potash soaps are more soluble in water than are sodium soaps so they yield molecular, that is, true solutions over higher ranges of concentration than the sodium soap of the same fatty acid. The lye or lyes in any case should be of high degree of purity since there is no washing out anywhere in the process.

The mixture of oils may well be built around Cochin grade coconut oil since it appears to be best suited to the purpose. This in spite of coconut's harshness on some skins and tendency to remove too much natural oil on those scalps that do not excrete a normal amount to replace it reasonably quickly. Olive oil is a good addition to coconut oil, although it reduces the copiousness of the lather and it gels at much lower concentrations than the other oils usually employed. On the other side of the ledger is the mildness of olive oil and the following among consumers which it enjoys. Accordingly, if employed, its use may well be capitalized on the label and in the promotional copy. Castor oil is a good addition to the oil mixture in certain formulas. It suggests free fat in the lather in use.

Almond, linseed, palm kernel, sesame, peanut, corn and even cottonseed oil find application apparently. The use of linseed is largely confined to pine-tar shampoo as its odor in other types is difficult to cover. Rosin has been advocated to act as an anti-oxidant or preservative. However, it has no place in the shampoo formula because it resists rinsing and leaves a tacky feel, and if used in any appreciable quantity, the characteristic rosin odor.

The method of manufacture will be governed by the type and capacity of the equipment available. The procedure briefly outlined works satisfactorily and may be modified to suit conditions. Shampoo may be made in a steam-jacketed pan or kettle using horizontal agitation. An open and a closed coil may replace the steam jacket but the batch becomes much more unwieldy. Working in the higher concentrations causes an emulsion to form sooner and the saponification to proceed faster, of course.

Put the oil or mixture of oils in a kettle at a temperature of about 90° F. Run in the calculated amount of potash lye or mixture of lyes of about 45 per cent concentration in a thin stream with agitation. To avoid a setting up, as soon as jellying starts run in hot water to lower the concentration to about 28 to 30 per cent anhydrous soap. A further dilution below the figure suggested will retard the rate of saponification. In no case apply heat until after this hot water has been added.

Continue the boiling and agitation until the saponification is complete as confirmed by analysis. A simple

A study of the market . . . and the "best sellers" . . . a discussion of composition, clarification, perfuming, analysis, and packaging.

(Part II)

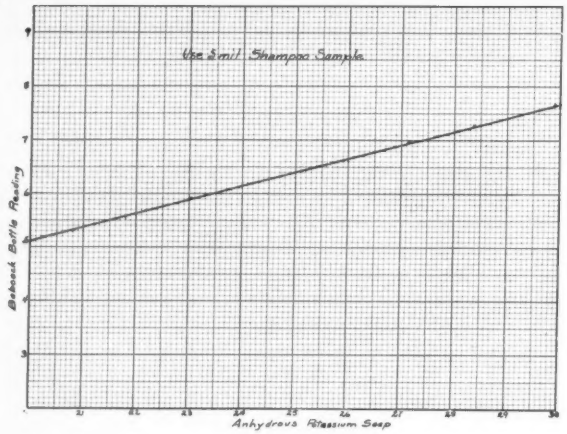
By RALPH H. AUCH

method accurate enough for control work is: Dissolve five ml. of dilute or 5 g. of relatively concentrated jellylike shampoo in neutral alcohol and titrate to neutrality with N/10 potash or acid as required. If off appreciably on either side of neutrality, calculate the amount of lye or oils required to adjust and add to kettle. Then continue the boiling for a time and repeat the analysis. If near neutral on the alkaline side and a clear appearance indicates little or no free oils remaining, then boiling may be continued without any adjustment. If a sample drawn later checks the previous one, the reaction has gone to completion.

There remains the matter of adjusting the concentration of anhydrous soap reasonably accurately to the standard delivery or packaging figure. The usual method for determining anhydrous soap in liquid soaps and shampoos is long and tedious and is given here solely so that the necessary table or graph required for using a unique, simple method sufficiently accurate for control work may be prepared.

Total anhydrous soap—Dissolve about 15 g. of the sample in 100 to 150 ml. of water in a 250 ml. Erlenmeyer flask. When solution is complete, add dilute sulfuric acid in slight excess, insert a small funnel in the neck of the flask, and heat the flask at a temperature not exceeding 60° C. until the fatty acids separate as a clear layer. Transfer to a separatory funnel, draw off the acid layer into a second separatory funnel, and shake the acid aqueous liquid with two 20 ml. portions of ethyl ether. Dissolve the fatty acids in the ether used for washing the aqueous liquid and shake with 10 ml. portions of water until they are no longer acid to methyl orange indicator. Unite the water portions used for washing and shake in a separatory funnel with 20 ml. of ethyl ether, draw off the aqueous layer and wash the ether layer with water until the washings are neutral to methyl orange. Unite the ether solutions (if necessary, filter, washing the paper with ether) in a suitable weighed vessel, rinsing the containers with a little ether and adding the rinsing to the main solution. Add sufficient neutral ethyl alcohol (90 per cent or higher) free from carbon dioxide to give a total volume of 100 to 150 ml., add phenolphthalein indicator and titrate to exact neutrality with standard potassium hydroxide solution noting the volume required. Evaporate off the alcohol on a steam bath. Add a little absolute alcohol and again evaporate to dryness. Moisten with absolute alcohol and dry in an oven to constant weight in an inert atmosphere at a temperature not exceeding 150° C., and calculate the percentage of soap.

Here is the short method requiring reference to a table or graph. The table or graph may be prepared by running any given shampoo (oil mixture) in a series of different concentrations by both methods to determine points from which to prepare the graph or calculate the table. Pipette 5 ml. at kettle temperature into a Babcock milk test bottle and wash it down out of the neck with warm water. Add dilute sulfuric acid in slight excess using methyl orange indicator. Keep the



Babcock bottle warm on the water bath by immersing in large beaker of water until the fatty acid layer clears. Then add hot water from the wash bottle to bring the fatty acids into the calibrated neck of the Babcock bottle. Centrifuge in a Babcock milk tester. Read the volume and consult the table or graph for concentration. Calculate the quantity of water or water and desired final concentration of alcohol to add to the batch of shampoo to bring it to the desired final standard concentration. The analysis may be repeated after dilution if it is desired to confirm the calculated anhydrous soap figure.

Numerous have been the additions made to liquid soap shampoos and even more numerous those recommended in the literature. Sugar, potassium carbonate, sulfonated oils particularly those of castor and olive, borax, glycerin and of course alcohol are those most frequently found. The sponsors of each usually advance good sound reasons for their incorporation. Under certain conditions and in certain formulas each may be found to impart desirable properties. Either or all may be tried out experimentally for their various effects on one's pet formula.

The soaps of triethanolamine have their following also in spite of the fact that this alkali substitute costs approximately ten times what good quality potassium hydroxide may be had for. And further, the use of oils, as such, with triethanolamine are precluded and the corresponding fatty acids must be employed. Coconut fatty acids, linseed fatty acids, and oleic acid of good color and odor are available for those who want to exhaust this possibility. This writer has found little need for any of the above. Potassium carbonate up to three quarters of one per cent has been found a good addition to certain pine tar shampoos. Alcohol up to five per cent has been utilized to good advantage, when dirty white cold soap scrap high in soda soaps has had to be worked off in shampoo.

"Cloudiness," "haziness," "sediment," "turbidity," and "flocculent precipitate" does not begin to exhaust the vocabulary when the average manufacturing foreman or production man begins to discuss that lack of clarity so prevalent in shampoos. In fact, some of the rarest and choicest profane expressions may owe their origin to this shampoo shortcoming. Singularly, more of the criticism of the sediment in shampoos seems to come from within an organization, the sales department in particular, than from without, i. e., from the consuming public. Milady doubtless expects her perfume, her facial astringent, and some of her other toilet accessories to be crystal clear, but if a shampoo performs its function she is not likely to switch to another brand, simply because it lacks a "high polish." Nor is there likelihood that the sterner sex attaches undue importance to clarity.

It would appear to be the part of wisdom to use preventive measures rather than depend on a cure-all to clarify shampoo. Incomplete saponification will cause a shampoo to cloud, even after filtering bright, weeks subsequent to manufacture. This bit of theory may explain it. If free oil and free alkali are both present in the finished, incompletely saponified shampoo, the free oil is probably of high titre. This high titre oil slowly saponifies to form relatively hard soap which tends to be salted out by the lower titre soaps present. In passing, thorough saponification is also imperative to avoid rancidity that produces an odor characteristic of the oil used. Four leading shampoos checked showed 0.22; 0.54; 0.23; 0.17 per cent free fatty acids which probably developed after bottling, indicating incomplete saponification in the kettle.

Linked with the above is the presence of unsaponifiable matter present in oils of poor quality. The use of distilled water is usually urged to avoid the formation of insoluble soaps of magnesium and calcium from the hardness of the tap water. Distilled water is safe but it does cost money to produce. A simple expedient is the addition of a special mildly alkaline salt that forms complex water soluble salts with the magnesium and calcium of the tap water thus preventing the formation of the corresponding insoluble soaps. Insufficient aging of the completed shampoo is another cause for lack of clarity. Settling tanks of ample capacity to permit three to four weeks, storage and having preferably conical bottoms with a series of draw off cocks at different levels near the bottom allows for pumping off the finished shampoo through a suitable filter without disturbing the sludge accumulation.

Chilling before filtration is the standard practice of many manufacturers. Careful manufacture of well balanced formulas has never made this necessary. If chilling is resorted to, one point may well be borne in mind. Momentary chilling through a coil in a freezing bath is of little or no value for the formulas on which it has been tried at temperatures as low as 40° F. Chilling must be thorough and for a period of hours if the subsequently filtered shampoo is to remain indefinitely clear.

SHAMPOO has become such a widely used, commonplace product that the question arises whether directions are really necessary. The big sellers continue to stress by completeness on the label or in a package insert the importance of directed use while the dime store and the "gyp" shampoos carry few, if any, directions. It would appear the part of wisdom to cast one's lot with the former and provide detailed directions.

Cautions are admittedly bad things on any label. However, here are two that appear to have a place. In very hard water, the user will find the hair softer and more lustrous if the shampoo includes a final rinse with diluted lemon juice or vinegar. Shampooing removes much of the natural oils. If there is a tendency toward dryness, the use of an oily tonic, a pomade or other means of relieving the dryness of the scalp may well be advocated.

Few shampoos suggest the frequency with which they should be used, yet this determines when the user is ready to purchase the next bottle. A nice sales story could be built around the fact that dust, perspiration, oily secretion from the sebaceous glands and other matter accumulate upon the scalp and hair even more rapidly than on other parts of the body.

There is a too general supposition that shampooing has a detrimental effect on the scalp and hair. Then, too, women have been told by their doctors not to use shampoo. "It is splitting your hair," "It is too drying," "It is causing the hair to fall excessively," etc., etc Small wonder, when one considers the carelessness and ignorance with which much shampoo has been prepared. One English writer even has described in a trade journal how to make shampoo with a wooden wine barrel and a stoneware jar as the only manufacturing equipment. If in critical mood, one may find fault right here in the States with formulas in the widely used "Pharmaceutical Recipe Book" published by the American Pharmaceutical Association. In the formula for "Bay Rum Shampoo," ten per cent potassium carbonate and only fifteen per cent soft soap N. F. which is approximately half anhydrous soap is used. Thus the alkaline salt exceeds the soap content.

Under "Liquid Shampoo Soap," the first formula that appears is made from a mixture of 6.6 per cent coconut oil, 7.8 per cent cottonseed oil and 3.6 per cent stearic acid. Certainly such a mixture is far from an ideal shampoo base even though it is saponified with an arbitrary 4.2 per cent of potassium hydroxide which may, but likely will not make a soap anywhere near neutral.

Nevertheless, it is probable that carelessness in use of the shampoo is responsible to a greater extent than carelessness in manufacture of the shampoo. What, for example, can be worse than a shampooing with water as hot as the user can stand followed by rinses with water as cold as is available? These sudden temperature changes subject the hair follicles to something they simply cannot stand.

Proper verbiage on the container and in the promotional copy can break down the resistance referred to to some extent but good formulation is imperative to hold the dearly won user. The palm for effective promotional copy, brevity considered, probably goes to a shampoo of the soapless type. "Billowy suds, lightning rinse, lustrous hair."

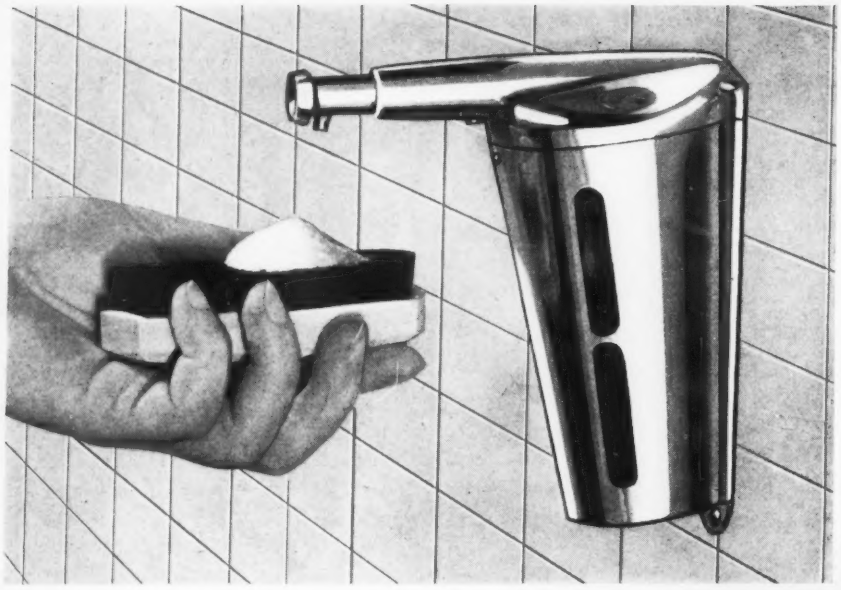
The packaging of shampoo is really outside the scope of this discussion but a few remarks may not be amiss. The bottle is going to be wet, and very likely, the hands soapy and slippery when the bottle is in use. It is well then to choose a shape that affords a good firm grip. One large manufacturer has four depressions or finger holds on the side of his bottle. Another has serations on the sides of his bottle which serve the same purpose. A third uses a plain cylindrical bottle of diameter small enough to afford ready handling. A new cylindrical tonic bottle that is of smaller diameter in the middle to carry the label, and a new vegetal bottle which is a segment of a cone with an inverted matching segment both offering a good non-skid grip, should have been shampoo bottles. Either shape offers a suggestion for the evolution of a container that should prove a "natural." The bottle may well be of relative squat shape so it will not topple or fall altogether from the precarious positions it is likely to be hastily placed in when soap gets in one's eyes. Then there is the height of the medicine chest shelves also to be considered.

Earlier stock bottles either reeked of the drug store or were discarded private mold oddities. Now such bottles can be had that are both practical and attractive without the required large initial order or mold outlay for private mold ware. Due consideration should be given the neck opening. A large one is relatively messy in use, while a restricted opening although more convenient in use, is relatively more difficult to fill. The cap should be attractive and be of some plastic or other non-corrosive material. If the manufacturer is unsuccessful in securing and maintaining clarity, the bottle may be of amber or blue glass instead of flint to hide this deficiency. For those willing to spend more money for the container, an opal glass bottle is at once opaque to hide any precipitate and attractive to lift the product out of the commonplace.

Since the label will be soap smeared on occasion and wetted frequently, it may well be of good stock, either varnished or lacquered and printed with alkali-fast inks. For the same reason it should be securely applied so that moisture absorption and soap cannot loosen it, or get underneath to discolor or make it otherwise uninviting in appearance.

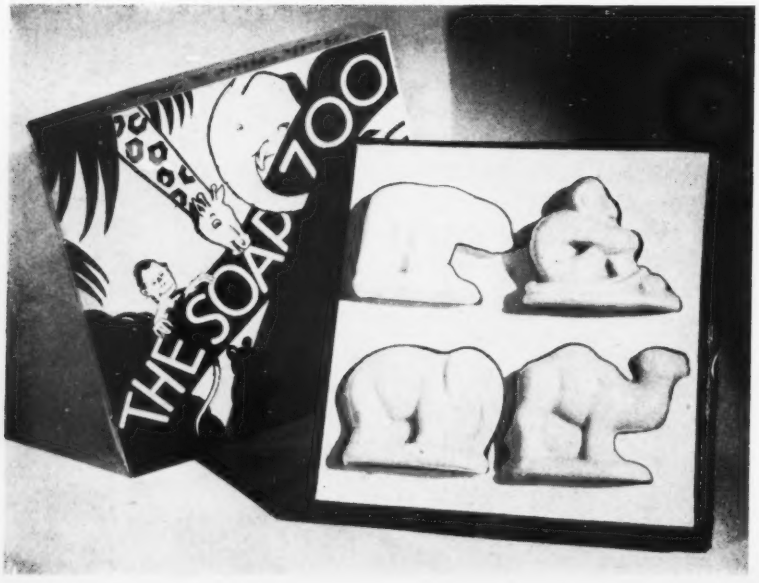
In closing, a suggestion is offered the manufacturer who is able to produce a polished, brilliantly clear product. Use a transparent spot label to capitalize the brilliance of the shampoo. Let the fellow who cannot clarify his be content with an opaque or colored glass bottle or else a wrap-around label to hide the deficiency.

New Products



A dispenser of soap lather which has just come on the market . . . a lathering liquid soap dispenser by the Bobrick Dispenser Company of New York . . . under the name of Lathurn.

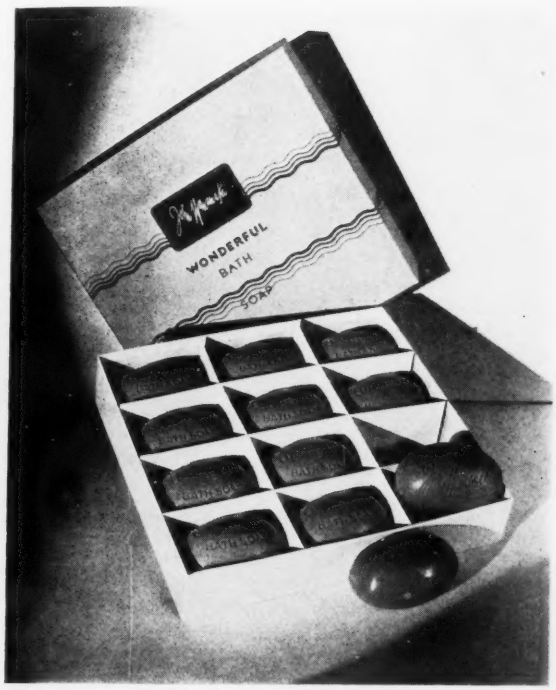
A new bath gift combination, consisting of a large bar of gardenia toilet soap and box of bath powder . . . put out by the Allen B. Wrisley Company of Chicago.



A new soap figure gift package for children . . . the soap zoo, consisting of four animals in different colors . . . also put out by Wrisley . . . retails for twenty-five cents.

and Packages

O'Cedar adopts a new combination of colors for both its liquid and paste waxes . . . a striking contrast in maroon and yellow . . . product by O'Cedar Corporation of Chicago.



Twelve egg-shaped cakes of fancy toilet soap to the box in a half-dozen odor and color combinations is one of the newest items in the private brand soap line of John Wanamaker, New York and Philadelphia.

Garden Pastels of Vion Perfumer . . . a new toilet soap combination package of four odors and four colors . . . packed in display fashion in fancy box . . . soap by Lightfoot Schultz Co. of New York.

...also

Samoline Cleaning Paste appears in a newly designed package . . . quarter-pound, one and two pound jars . . . manufactured by the Samoline Corporation of Cincinnati . . . glass jars by Owens-Illinois.

Garden Flit powder is the newest addition of the Flit line of Stanco, Inc., of New York . . . in a new type patented ready-to-use blower package . . . same yellow and black color design as Flit liquid and powder.

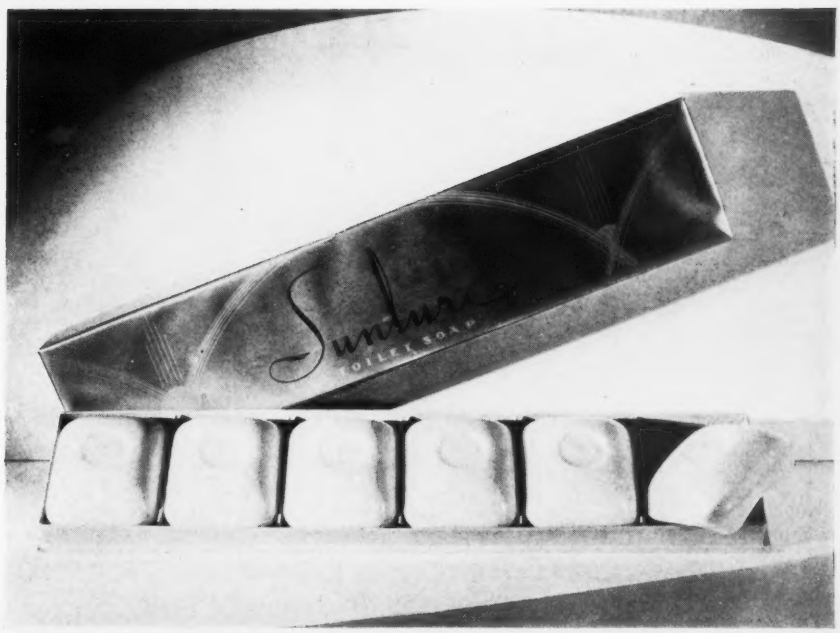
A new castile soap, especially for the hard-water districts of the country is brought out by the Barcelona Company of New York . . . not a full olive oil soap, but one designed for free lathering in hard water.

new!

Soft-O, a new water softening product, appears on the market in a new type of package with pour-top. Product manufactured by George H. Fick Company of Brooklyn. Carton designed and manufactured by the Robert Gair Company of New York.

A gift combination shaving and bath set brought out by Wrisley of Chicago for the 1935 Christmas gift trade . . . consists of shaving cream, toilet soap, shaving lotion, and hair dressing . . . box is paper imitation of natural wood.

◆

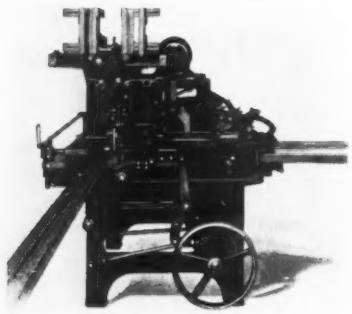


One of the most beautiful of many new fancy toilet soaps which have come on the American market . . . Sunlure Toilet Soap in gold paper box . . . concave bars . . . deep cream shade . . . made by Hewitt Soap Company of Dayton.

Retired with HONOR

AFTER serving their owners from 15 to 20 years or longer, many of our wrapping machines are now being replaced by our more modern and improved models. Practically all of these old machines could still be used—are still capable of doing a good wrapping job. But on a dollars-and-cents business basis, they simply cannot compete with our new machines. And so they are being "retired with honor".

The fine service rendered by our old machines is a convincing recommendation for their more modern brothers . . . an assurance of unquestioned dependability, so important in the packaging end of your business.



Modern High-Speed Toilet Soap Wrapping Machine

With its speed of 150 cakes per minute, this machine can replace two of the older type machines.
By means of adjustments provided and the use of interchangeable parts, more than one size can be wrapped on the same machine.
Can be equipped to insert cardboard or circular between inner and outer wrapper.

Would it pay you to Modernize?

A comparison of our new machines with those you are now using might point the way to important benefits. Operating at high speed, they increase labor productivity, and economize on valuable floor space. They are extremely flexible (adjustable for a wide range of sizes) and can be designed to produce new and distinctive types of packages, employing practically any kind of wrapping materials.

With such machines you can turn out a thoroughly modern, attractive package that has strong competitive sales advantages. And the savings they effect usually pay for the investment in a very short time.

Write for information regarding our modern wrapping machines for your type of product.

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Over 200 Million Packages per day are wrapped on our Machines

SOAP INDUSTRY TO MEET JAN. 30

The annual meeting of the Association of American Soap & Glycerine Producers will be held in New York, probably at the Waldorf-Astoria Hotel, on January 30, according to Roscoe C. Edlund, general manager of the Association. A formal annual meeting, required by the by-laws of the Association will be held on December 19, but this meeting will be postponed in accordance with present plans to January 30. All members of the soap manufacturing industry will very probably be invited to attend the January 30 meeting. Additional plans call for a general meeting of the American soap industry, under the auspices of the Association, in Chicago, probably on April 2, according to Mr. Edlund.

FOURTH GENERATION IN SOAP FIRM

For ninety-five years, there has been an unbroken chain from father to son in the management of Albert Soaps Limited, Montreal, Canada. The recent addition of Gordon C. Savage, son of J. F. Savage, president of the firm, to the staff, brings the fourth generation of the family of the founder to the company. The business was founded in 1840 by Alfred Savage, who took his son into partnership in 1864 under the firm name of Alfred Savage & Son. A joint stock company was formed in 1905 under the name of Albert Soaps Limited, altogether a family concern. The firm began in the manufacture of toilet preparations, later extending the business to oils, and then to textile and laundry soaps. Toilet soaps were the last added. The company is stated to have been the first in Canada to make a pressed laundry bar. Their Queen's Laundry Soap is widely sold in the Province of Quebec.

Clarence J. Huff, general sales manager of Procter & Gamble Co., was elected a member of the board of directors of the company at the recent annual meeting. Mr. Huff has been with P. & G. since 1890 when he went to work with the firm as an office boy. He moved into the sales department in 1896, became manager of the central sales division in 1912, manager of the case goods department in 1927, and in 1932 was promoted to the position of general sales manager.

K. W. Merkel, formerly connected with Ungerer & Co., New York, is now engaged in the essential oil business on his own account. He is offering a line of essential oils, aromatic chemicals and various other perfuming compounds and materials. Mr. Merkel's New York office is located at 50 Church Street and his laboratory at Morris Plains, New Jersey.

A. Brickman, representative of B. Herzog, Rio de Janeiro, is shortly to return to Brazil after a visit to United States. He is interested in hearing from any manufacturers interested in introducing their products on the Brazilian market. Interested parties may communicate through the publishers of SOAP.

CASTILE SOAP OUT OF U. S. P.

Several important changes in soap standards will appear in the new U. S. Pharmacopoeia when it is issued December 16, 1935, according to a preliminary announcement by E. Fullerton Cook, chairman of the committee on revision. The new standards of the U. S. P. XI will supersede the old ones, June 1, 1936, it has been announced. The paragraphs in the report of the committee of revision dealing with changes in soap standards are as follows:

Sapo Durs—The synonym "Olive Oil Castile Soap" has been omitted and all reference to olive oil eliminated since there was no known method whereby compliance with this specification could be proven. Rigid tests are introduced, however, to insure a soap of the quality needed for the preparation of Soap Liniment (now Camphor and Soap Liniment) since this product was admitted exclusively as a pharmaceutic necessity to insure a soap which would not solidify in alcoholic solution and which would have the necessary qualities for a liniment. The new name "Hard Soap" is in harmony with the nomenclature long used for the other official soap—"Soft Soap".

Sapo Mollis—The formula of the U.S.P. X has been retained. In this linseed oil is specified. A note has been added authorizing the replacement of the mixed sodium and potassium hydroxides by potassium hydroxide if preferred.

It was proposed that in the formulas for this soap and also for Compound Solution of Cresol (now Saponated Solution of Cresol) that permission be given to use "any vegetable oil". This change has, however, been deferred, awaiting the result of extensive researches already planned. An important factor in the differences in detergent value in soft soaps and in the germicidal efficiency of various Cresol solutions, made from the same cresol, is now suspected to be their varying surface tension qualities. This effect must be determined for the various oils before the Pharmacopoeia can approve their use and in the meanwhile linseed oil, with which there has been large experience, is retained temporarily. As soon as there is satisfactory evidence as to the use of other oils a change will be made in the U.S.P. formula so that advantage can be taken of the use of less costly fatty oils.

T. A. Asbury and C. D. Jordan, director and vice-president respectively, of the Wesson Oil and Snowdrift Co., resigned at the annual meeting in New Orleans on November 19. L. C. Haspel, vice-president, was elected director.

F. G. Robin has been appointed general export manager of Magnus, Mabee & Reynard, Inc., New York. Mr. Raymundo Koestinger, Colonia del Volle, Mexico, D. F., is now exclusive sales representative for the company in the Republic of Mexico, filling the position formerly held by Mr. Robin.

JOSEPH TURNER DEAD

Joseph Turner, founder of Joseph Turner & Co., New York, and long a prominent figure in the American chemical industry, died at his Ridgewood, N. J., home on Nov. 17 at the age of 67. He was one of the first to sell caustic potash in the American market, and had for many years been identified with the sale of this and other alkalies to the soap, textile, and allied industries. Mr. Turner was born in Heywood, England and came to the United States in 1880 to enter the employ of J. L. & D. S. Riker, well-known chemical house. He became general manager of the Riker firm in 1912, later taking it over under his own name in 1923.

Joseph Turner

During the war, Mr. Turner served as a member of the Chemical Warfare Board, having refused a commission as colonel after several commendations. He was an ardent fisherman, maintaining a summer home at Islip, Long Island, where he kept several boats. He was a member of the Chemists' Club and the Drug & Chemical Club, as well as Bay Shore Yacht, Columbia Yacht, Long Key Fishing, and the Ridgewood Country Clubs. He is survived by his wife, Georgette McKay Turner, a daughter, Mrs. Dorothy Turner Merrill, and two grandchildren, Robert Turner Merrill and Robin Chadwick Merrill. His son-in-law, Walter Merrill, has been general sales manager of Joseph Turner & Co. for several years past.

◆

Dusts containing 0.50-0.75 per cent of rotenone, prepared by mixing finely ground derris root with either talc, infusorial earth, tobacco dust or ground marc, which is pyrethum powder from which the pyrethrins have been extracted, effectively controlled the common cabbage worm, the cabbage looper and the larvae of the diamondback moth. Several applications of the dust in a ratio of 25-30 pounds to the acre were made at 7-10 day intervals. Derris was not very effective against the zebra caterpillar. The Mexican bean beetle was effectively controlled by spraying with a suspension of 1.5-2.5 pounds of ground derris root (4.4 per cent rotenone) in 50 gallons of water. Derris sprays gave promising results in the control of flea beetles and onion thrips. Neale F. Howard, Horatio C. Mason and Ralph H. Davidson. Ohio Vegetable Growers Assoc., Proc. 20th Ann. Meeting **1935**, 21-5.

◆

Roy J. Colter, who resigned recently as manager of the cosmetic department of Frederick Stearns & Co., Detroit, has joined Vadsco Sales Corp., L. I. City, N. Y., as assistant to the general manager.

Chicago Trade Notes

GEORGE A. WRISLEY of the Allen B. Wrisley Co., Chicago, has been nominated for president of the Chicago Perfumery, Soap and Extract Association for 1936 in a report of the nominating committee. Other nominations are T. E. Henshaw of the Thayer Pharmacal Co. for vice-president and M. B. Vance of Givaudan-Delawanna, Inc. for secretary-treasurer. The annual meeting and election will be held Dec. 17.

◆

At the November 12th meeting of the Affiliated Sanitary Supply Distributors of Chicago it was announced that the average increase in business by members of the association during 1935 was 16 per cent. The average increase for the month of October was 17 per cent.

◆

The following were prize winners at the Thanksgiving bowling tournament of the Chicago Perfumery, Soap and Extract Association at the Hamilton Club, November 20th: 1st, Al. Burgh; 2nd, W. Susanke; 3rd, Martin Vance; 4th, Ray Morris; 5th, C. Seguin and 6th, V. W. Franzen. The tournament was marked by large attendance and the fact that Martin Vance bowling from scratch won third money.

◆

Mr. and Mrs. Max Rauer accompanied by their son, Max Jr., were in Chicago early in December on their way to New York where they will embark on the *S. S. Bremen* for an extended European trip. Mr. Rauer is chief chemist of the F. W. Fitch Co. of Des Moines.

◆

Charles Spicer has been appointed by T. B. Robertson Products Co., Chicago, soap and sanitary supply manufacturers, as their representative for the state of Wisconsin.

◆

R. Diaz Garay, head of U. S. Sanitary de Mexico S. A. which is a subsidiary of U. S. Sanitary Specialties Corp., Chicago, has arrived in Chicago for a conference with the company's executives regarding the future policies to be pursued in their Mexican operations.

◆

The November meeting of the Chicago Perfumery, Soap and Extract Association was held at the Hamilton Club, November 13th. John S. Hall, the association's attorney, discussed the new developments on legislative matters and answered questions of the members concerning the social security act which goes into effect January 1, 1936. Harold A. Safford of radio station WLS talked briefly regarding what could be expected in the way of entertainment for the Christmas party which is being held December 12th.

◆

L. T. Greist, Chicago attorney, entertained the members of the Chicago Drug and Chemical Association at their November 21st meeting with a description of his trip

to Point Barrow, Alaska. Mr. Greist's talk was accompanied by a number of interesting pictures which he took during the course of his trip. Final plans for the Christmas banquet, December 19th at the Stevens Hotel, were announced. Reservations are coming in fast and it is expected that a record breaking crowd will attend.

BOURJOIS LOSES LUXURY TAX SUIT

A decision in the suit of Bourjois, Inc., New York, against the Collector of Internal Revenue, to recover $13,918.39 paid by the plaintiff as additional tax on cosmetic and toilet preparations for September, 1932, has just been handed down by Federal Judge Knight of the U. S. District Court for the Western District of New York. The decision was adverse to the plaintiff, but it has been pointed out by counsel for the Toilet Goods Association that the decision in this first case would be binding only in cases parallel to the Bourjois case. The case involves an interpretation of certain sections of the Revenue Act of 1932 governing luxury taxes on toilet soaps and cosmetics which will be highly important to the rest of the industry and so has been followed with great interest.

Bourjois sold its products to two sales corporations at cost of manufacture, plus 1½ per cent, plus 10 per cent, plus tax, basing its tax returns to the government on this selling price. The Commissioner of Internal Revenue declared that this did not constitute a fair market price on which to base a tax, and computed an additional tax based on the amount received by the sales corporation on resale of the goods. This was paid by Bourjois under protest, and it is the plaintiff's claim for refund which is now in litigation, and on which this first decision has been rendered. It is indicated that an appeal will be taken promptly. This tax suit has no connection with any excise taxes on coconut oil or other raw materials.

The requirement that imported crude glycerin be marked with the name of country of origin was upheld by the United States Court of Customs and Patent Appeals in a recent case at Washington. The containers must disclose both their own origin and the origin of the contents. The court also upheld the penalty for lack of such markings.

Stocks of refined cottonseed oil in United States as of October 31, 1935, totaled 289,326,402 lbs., as compared with 462,769,093 lbs. on the same date last year. Stocks of crude cottonseed oil were 110,557,338 lbs., October 31, 1935, as compared with 97,575,205 lbs., October 31, 1934.

Vadsco Sales Corp., New York, reports net profit, after depreciation, taxes, etc., of $1,793.51 for the third quarter of 1935 as compared with a net loss of $1,648.09 for the corresponding period of 1934.

ITTNER HEADS CHEMICAL ENGINEERS

Dr. Martin H. Ittner, chief chemist for Colgate-Palmolive-Peet Company, Jersey City, N. J., was elected president of the Institute of Chemical Engineers at the annual convention of that organization held at Columbus, Ohio, recently. Other new officers chosen include Fred C. Zeisberg, vice-president; Frederic J. LeMaistre, secretary, and Charles R. DeLong, treasurer.

Dr. Martin H. Ittner

Dr. Ittner an outstanding technical authority on soaps and perfuming materials, and widely known in the soap industry has been associated with Colgate since 1896.

P. & G. WINS APPEAL IN "CHIPSO" CASE

The latest maneuver in the "Chase-O"—"Chipso" trade mark controversy has resulted in a decision for Procter & Gamble Co., owner of the latter mark. J. L. Prescott Co., Passaic, owner of "Chase-O", won in the U. S. Court of Customs and Patent Appeals last June when its petition for cancellation of the P. & G. mark was reaffirmed, but subsequently a temporary order was granted P. & G. restraining the Commissioner of Patents from cancelling the mark. The Prescott Company then petitioned the patent appeals court to have the restraining order dismissed, but the appeals court has now denied this petition.

Procter & Gamble Co. is using a group of college girls in a current sampling campaign in the Chicago territory on "Dreft". A fifteen cent package of this product is presented personally to each housewife, or if it cannot be delivered personally, a coupon is left entitling the holder to a 25c package for 15c.

The Federated Sales Service, Boston, has been appointed marketing counsel for the Milford Stain & Blacking Company, also of Boston. This company is marketing "Kleen" White, a new cleanser for white shoes, hats and gloves.

Pine Tree Products Co., Newport, N. H., has appointed Hilmer V. Swenson Co., Chicago, to direct its advertising account.

Colgate-Palmolive-Peet Co. reports that sales to date on its eight Christmas gift boxes have run 100 per cent ahead of last year's sales for the full Christmas season. The company used a new plan to boost Christmas gift box sales this year—offering inducements to sales people who made as many as 144 sales of various C-P-P items.

There's Only 1

MUNN

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PALE WOOD ROSIN

AND Every Shipment Is The Same

● Munn shipments . . . like fingerprints . . . never change. A shipment made today and a shipment made a year . . . or 5 years . . . ago are duplicates, identical twins.

No need to risk a changed formula when you use Munn. No need to alter the uniformity of your product. Consider this advantage carefully.

Consider, too, the advantage of Munn's absolute freedom from foreign matter. Newport methods of manufacture make foreign matter in the finished rosin an impossibility, Munn *has* to be clean, because of the way it's made.

GENERAL NAVAL STORES COMPANY, INC.

Address Main Office 230 Park Avenue, New York City — NEWPORT — Plants: De Quincy, La.; Pensacola, Fla.; Bay Minette, Ala.

PERSONAL AND IMPERSONAL

Dr. Louis W. Bosart, research chemist for Procter & Gamble Co., spoke on "Perfumes and Odors" at the recent fall meeting of the American Oil Chemists' Society in Cincinnati. Another speaker to address the oil chemists was Ralph H. Auch. He pointed out that, due to the great volume of hair lotions, shaving preparations, etc., sold to men, the male sex is really a bigger buyer of cosmetics than the female.

The Phoenix Oil Company, Cleveland, maker of "Murphy's Oil Soap," has appointed Lang, Fisher & Kirk, Inc., of that city, as its advertising agency.

A banquet was given recently in the Jersey City plant of Colgate-Palmolive-Peet Co. in honor of the company baseball team which during the 1935 season won the championship of the Jersey City Industrial League. William McGovern, Commissioner of Jersey City, was present at the dinner to award the trophy, of which he is the donor, which is awarded each year to the winning team.

R. J. Colter, for many years connected with Frederick Stearns & Co., pharmaceutical and cosmetic manufacturer, Detroit, has been made assistant to the general manager of the Vadsco Sales Co., Long Island City, N. Y.

Nassour Brothers, Inc., manufacturing and selling toilet soaps, has signed a stipulation with the U. S. Federal Trade Commission agreeing to discontinue use of the word "Imported" in the sale of its products, in a manner implying that these goods have been imported into the United States from a foreign country, when this is not true; and from employing the words "Olive Oil" to designate preparations the fatty content of which is not composed wholly of olive oil.

Spazier Chemical Products, Inc., Dover, Del., has recently been incorporated by L. R. Wilson, L. A. Irwin, and M. A. Desmond to manufacture a soap under the name "Dew Drop Crystals."

The American Association of Textile Chemists and Colorists held a regular monthly meeting at the Elm Golf Club, Paterson, N. J., Friday evening, Nov. 22. The principal speaker was Dr. Harvey Alexander Neville, Associate Professor of Chemistry, Lehigh University. He spoke on "Surface Chemistry and Dyeing." Dr. Jerome Alexander led the discussion following the presentation of Dr. Neville's paper.

H. F. Elberfeld, formerly assistant controller of Colgate-Palmolive-Peet Co., has recently been appointed controller.

George P. Huisking, for many years associated with Chas. L. Huisking & Co., New York, will establish a Chicago branch for that company and for Conti Products Corp. shortly. August E. Drucker Company, manufacturer of "Revelation" tooth powder, is moving its Chicago office into the same quarters, which will be located at the North Pier Terminal Building, 581 East Illinois Street.

J. B. Williams Company, New York, is introducing through the drug trade "Williams" dental cream, a new tooth paste packed in a tube.

Gilbert Colgate, former president and chairman of the board of Colgate & Co. and later director of Colgate-Palmolive-Peet Co., left a gross estate of $3,916,666 and a net of $2,980,871, according to a transfer tax appraisal filed last month in New York Court. He was a grandson of William Colgate, who began the Colgate business. Chief assets in the estate comprised securities appraised at $3,100,317, which included 1,330 shares of Colgate-Palmolive-Peet Company preferred stock appraised at $106,400 and 2,122 shares of common stock at $24,403.

Max Factor's new Make-Up Studio was opened November 26th with a preview in honor of the notables of the film industry and the press. The new plant represents an investment of over $600,000, and is equipped with modern fixtures and machinery. Both Max Factor & Company and its subsidiary, Factor Manufacturing Company will be consolidated in the new Hollywood headquarters. The building is acclaimed as being one of Hollywood's most beautiful, and is so constructed that in the manufacturing plant there are fifteen thousand square feet illuminated by daylight. This plant is capable of producing twenty thousand pounds of face powder a day. It will afford steady employment to more than six hundred workers, all of whom were on duty and operating the plant the night of the preview.

The nominating committee of The Foragers of America has named the following slate of candidates for membership on the Board of Governors of the organization: A. R. Chisholm, T. M. Hanlon, Frank Hermann, Fred Anderson, George Stevens and Martin Schultes.

NEW IDEAS

from the Glyco Laboratories

The second of a series of announcements
By Edward Rosendahl

Now available

A NON-HYGROSCOPIC OIL SOLUBLE in ALCOHOL and OILS, EMULSIFIABLE in WATER

Because of its unusual properties as an emulsifying agent, there has been a keen interest in the newly developed DIGLYCOL LAURATE. Manufacturers in the soap and allied industries particularly are finding this material the answer to some of their most difficult problems.

Consider the following characteristics carefully. Do they suggest a way that this new material may be of value to you?

- Light, straw-colored liquid of low viscosity.
- Self-emulsifiable in water; forms stable, milky emulsions.
- Completely soluble in alcohol, mineral oil, vegetable oils and hydrocarbon solvents.
- Miscible with Glycerin, Diethylene Glycol, and Ethylene Glycol in the proportions of 1 part to 3.

Because of its Unique, Diversified Characteristics Diglycol Laurate Is Adaptable for Many Uses:

- For dry cleaning soap it has these important advantages:
  Dissolves quickly and clearly in the solvent. Low surface tension increases power of penetration and enables the solvent to act more quickly.
  High detergent powers.
  Does not build up pressure on filters.
- Distinct improvements in agricultural and cattle sprays have resulted from the use of Diglycol Laurate. It dissolves clearly in both mineral oil and kerosene forming a "soluble" fluid which is readily dispersed in water prior to spraying. Also it lessens the danger from "burning" which often takes place when straight kerosene is used. And because Diglycol Laurate has a very low surface tension, emulsions made with it spread more rapidly, more evenly. This produces a spray of maximum efficiency.
- Diglycol Laurate is extremely efficient in the manufacture of automobile, furniture and shoe polishes.
- It is strongly recommended for the manufacture of emulsions in the textile, leather, paper and similar industries.

Would you like to experiment with Diglycol Laurate? We shall gladly send you a FREE sample if you are interested.

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Have you seen the latest Glyco catalogue? It contains information about many new chemicals, and recently developed formulas. And it's yours for the asking.

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Manufacturers of

SCRUBBING SOAPS

NO. 22
FUN-L-FILL
FOR
CONVENIENCE
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The application of scrubbing soap to the floor with a high pressure compressed air sprayer, developed for this purpose, will make your product more effective and materially lessen the effort of scrubbing large floor surfaces.

Soap sprayed under pressure, is forced into every crack and crevice and into pits of rough porous wood or concrete floors. This will dissolve and loosen all dirt.

Spray the soap. Mop it up—and you have a quick clean job.

A Dobbins Soap Sprayer takes the Rub out of Scrubbing.

Write for complete information on soap spraying

DOBBINS MANUFACTURING CO.

DEPT. B NORTH ST. PAUL MINN.

George E. Marsh Co., maker of "Good-Will" soap, has transferred its operations from Lynn to Cambridge, Mass., after seventy-five years of operation in the former city.

Industrial Soap Co., St. Louis, has taken a ten year lease on a three-story building at 8th & Barry Sts., comprising 25,000 square feet of floor space.

Procter & Gamble Co. has announced the opening of its 12th annual soap sculpture competition, with prizes totaling $2,500 again offered in various classes. The contest closes May 1, 1936. No entry fees are charged.

The board of directors of American Home Products Corp., Wilmington, Del., recently declared a dividend of 20 cents per share on the stock of the company, payable Dec. 2.

Ken R. Dyke, advertising manager of Colgate-Palmolive-Peet Co., was elected chairman of the board of the Association of National Advertisers at the recent annual convention of that organization in Atlantic City.

Walgreen Co. has just completed a new five story building located at 3532 West 47th Place, Chicago, which will be used exclusively for manufacturing purposes.

Mrs. Eva H. Leggett has been awarded a judgment of $30,000 in her $75,000 suit against Barbasol Co., Indianapolis. The complaint alleged that Barbasol Co. had entered into a contract with her to pay her $100 a month for a cleansing cream formula, and that payments had subsequently been discontinued although the company continued to manufacture the cream. A verdict in favor of the plaintiff was brought in by the jury.

Robert Behrman has severed his connection with Du Rite Chemical Co., Washington, and has joined V. C. Products Co., Philadelphia, as president.

Climalene Co., Canton, Ohio, maker of "Climalene", is offering a "Cannon" dish towel in return for the top from a "Climalene" package and 5c in its current radio advertising broadcast over the NBC network.

Colgate-Palmolive-Peet Co. has added two new soap brands, Violet and Carnation, to its unadvertised drug store line. These are said to be the first white soaps in these odors.

Ferd. Mulhens, Inc., New York, is introducing a new line of toilet products for men under the name "Sir". Shaving cream, lotion and talc are included in the new line.

FISCHBECK TO LEAVE UNGERER & CO.

Charles Fischbeck, vice-president of Ungerer & Co., New York importers of essential oils and aromatic chemicals, has resigned effective January 1, to establish his own business. The new company will be known as Charles Fischbeck & Co. and will have offices in New York. It will also import and deal in essential oils and aromatics. Mr. Fischbeck has been associated with Ungerer & Co. for almost 25 years, his activities being chiefly in the purchasing and managerial ends of the business. He will be succeeded by Kenneth Voorhees, now also a vice-president of the firm, as general manager after January 1st.

NETHERLAND INDIA SETS SOAP QUOTAS

The Government of Netherland, India has adopted an import quota for soaps, which went into effect August 10, 1935, limiting importation of soaps for a ten month period. Under this governmental act, the quota for toilet soap, perfumed or unperfumed, was set at 850,000 kilograms, gross weight, and for all other soaps the quota is 2,000,000 kilograms. Under the quota limitation, it becomes necessary for all importers to be licensed, and to secure import permits before they are privileged to import soap of any form into the country.

In 1934, the total imports into Java and Madura which represent about three-quarters of the total imports into Netherland, India, were 1,074,086 kgs., of perfumed and unperfumed toilet soaps, which would make the total imports about 1,350,000 kgs. Of this amount, the United States imported 153,072 kgs. The new act will involve a 500,000 kg. decrease from the 1934 figure. The quota for all other soaps was set at 2,000,000 kgs. This figure will apparently not greatly affect imports, as only 850,000 kgs. were imported last year.

The country which has made the greatest strides in this trade in recent years is Japan. Supplying only 38,000 kgs. of toilet soap in 1929, it built this volume up to 513,000 kgs. by 1934, practically one-half of the import total.

In a paper presented by H. C. Link and Rensis Likert of New York, at the 6th International Congress for Scientific Management, were included some interesting data relating to the sale of toilet and household soaps. Brand names were not disclosed, so that the general information can be summarized as follows:

Kind of Soap Last Bought

	Package %	*Bar* %
1. For bulk or family laundry work.	53.2	46.8
2. For fine washing.....	78.1	21.8
3. For dish washing.....	61.2	38.7

The results were based on a survey of 4,000 families. *Perfumery & Essential Oil Rec.* **26,** 367 (1935).

"Marigold" wallpaper cleaner is a new product of Imperial Paper & Color Corp., Glens Falls, N. Y.

RECORD OF TRADE-MARKS

The following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

TRADE MARKS FILED

STA-WAX—This in solid letters describing auto and furniture polish. Filed by Sta-Wax Products Co., Mangum, Okla., July 31, 1935. Claims use since July 1, 1933.

PERMA-LUSTRE—This in solid letters describing furniture cleaner. Filed by Permatex Co., Brooklyn, Feb. 23, 1935. Claims use since Dec. 19, 1934.

MEDAKA—This in solid letters describing shampoo. Filed by Medaka Co., Portland, Oreg., Aug. 31, 1935. Claims use since Aug. 16, 1935.

HEXYLTAN—This in solid letters describing antiseptic. Filed by Sharp & Dohme, Inc., Philadelphia, Sept. 26, 1935. Claims use since July 11, 1935.

MODERNISTIC DAME—This in solid letters describing shampoo. Filed by Geida Co., Allentown, Pa., Aug. 5, 1935. Claims use since July 13, 1935.

TELLE—This on reverse plate describing shampoo. Filed by Fairyfoot Products Co., Chicago, Aug. 10, 1935. Claims use since July 7, 1935.

KOOLSOAP—This in solid letters describing soap. Filed by Dan Seman, New York, May 9, 1935. Claims use since Jan., 1934.

DEEKO—This in solid letters describing cleaner. Filed by Nu Way Laboratories, Cullom, Ill., Sept. 7, 1935. Claims use since Aug. 10, 1935.

TOKEN—This in solid letters describing cleaner. Filed by Lever Brothers Co., Cambridge, Mass., Sept. 28, 1935. Claims use since Sept. 9, 1935.

GATEWAY—This in solid letters describing shaving cream. Filed by Conrad Razor Blade Co., Long Island City, N. Y., Sept. 23, 1935. Claims use since Sept. 12, 1935.

NUTOX CLEANER—This in solid letters describing household cleaner. Filed by Youngstown Paint and Glass Co., Youngstown, Ohio, Sept. 25, 1935. Claims use since July, 1929.

BREEZE—This in solid letters describing cleaning compound. Filed by Lever Bros. Co., Cambridge, Mass., Sept. 28, 1935. Claims use since Sept. 9, 1935.

SURF—This in solid letters describing cleaning compound. Filed by Lever Bros. Co., Cambridge, Mass., Sept. 28, 1935. Claims use since Sept. 9, 1935.

EMPIRE—This in solid letters describing dry cleaner. Filed by Hubsell Co., Kansas City, Mo., Sept. 30, 1935. Claims use since June 8, 1935.

SAN-O-KLENZE—This on diamond shape reverse plate describing antiseptic and deodorant. Filed by San-O-Klenze Laboratories, New York City, July 30, 1935. Claims use since March 5, 1934.

STERI-ORIS—This in solid letters describing deodorant. Filed by Ling Chemical Co., Eldorado, Ark., July 23, 1935. Claims use since July 20, 1935.

NU-WAY—This in solid letters describing disinfectant. Filed by Nu-Way Wash Products Co., Chicago, Aug. 22, 1935. Claims use since April 1, 1935.

TAT THALATE—This in solid letters describing insecticide. Filed by Soilicide Laboratories, Upper Montclair, N. J., Aug. 30, 1935. Claims use since Oct. 1, 1933.

TICKCIDE—This on crescent reverse plate describing insecticide. Filed by Tickcide Chemical Co., Jacksonville, Fla., Sept. 7, 1935. Claims use since July 13, 1935.

LEM-O-WAX—This in solid letters describing furniture and auto polish. Filed by Wilbert Products Co., New York City, March 21, 1935. Claims use since March 3, 1934.

KO-MO-NIZE — This in solid letters describing auto polish. Filed by Charles W. Crouse, Johnstown, Pa., Sept. 25, 1935. Claims use since May, 1933.

PO-DO—This in solid letters together with silhouette of man's head describing shaving cream. Filed by Walgreen Co., Chicago, March 11, 1935. Claims use since March 1, 1935.

CHRYSTAL WHITE—This in solid letters describing soap. Filed by Colgate-Palmolive-Peet Co., Jersey City, N. J., Aug. 9, 1935. Claims use since 1894.

OCTAGON—This in solid letters describing soaps. Filed by Colgate-Palmolive-Peet Co., Jersey City, N. J., Aug. 22, 1935. Claims use since Nov. 30, 1887.

MORISAL—This in solid letters describing disinfectants. Filed by Anthony Pessolano, Astoria, N. Y., Aug. 6, 1935. Claims use since Nov. 1, 1934.

PARAROMA — This in outline letters in semi-circular shape describing moth cake and deodorant. Filed by Bordman Co., Philadelphia, Aug. 20, 1935.

ILLUSTRATION OF UNCLE SAM — Describing furniture and auto polish. Filed by Uncle Sam Chemical Co., New York, Dec. 5, 1934. Claims use since March, 1923.

NICO-ZIN—This in solid letters describing insecticides. Filed by Tobacco By-Products & Chemical Corp., Louisville, May 28, 1935. Claims use since May 23, 1935.

KLEENWHITE—This in outline letters describing tooth powder. Filed by B. & B. Laboratories, Los Angeles, July 2, 1935. Claims use since June 1, 1935.

AMUNO—This in solid letters describing moth proof-

ing compound. Filed by Merck & Co., Rahway, N. J., Sept. 6, 1935. Claims use since Aug. 30, 1935.

AURORA—This in solid letters with picture of rising sun, describing furniture polish. Filed by Aurora Polish Co., Steubenville, Ohio, Sept. 23, 1935. Claims use since Aug. 8, 1935.

TRADE MARKS GRANTED

329,901. Stove Polish, Porcelain Cleaner. Rose Products Co., Cicero, Ill. Filed June 3, 1935. Serial No. 365,743. Published September 10, 1935. Class 4.

329,905. Soap Powder. Vanisope Company, Cincinnati. Filed June 6, 1935. Serial No. 365,842. Published September 10, 1935. Class 4.

329,907. Cleaning Compound. Westvaco Chlorine Products, Inc., New York. Filed June 8, 1935. Serial No. 365,967. Published September 10, 1935. Class 4.

330,036. Waxes and Polishes. Shinette Products Co., New York. Filed January 22, 1935. Serial No. 360,550. Published September 10, 1935. Class 16.

330,045. Liquid or Paste Preparations for Cleaning Upholstery, Fabric, Metal, and Glass. Pure Oil Company, Chicago. Filed July 16, 1935. Serial No. 367,370. Published September 10, 1935. Class 4.

330,052. Cleaner. Mid West Laboratories, Des Moines, Iowa. Filed May 13, 1935. Serial No. 364,876. Published September 10, 1935. Class 4.

330,053. Cleaning and Washing Powder. Pick-It Products Co., New York. Filed May 8, 1935. Serial No. 364,801. Published September 10, 1935. Class 4.

330,070. Rug Cleaning Compound. Vartan M. Kalusdian, New York. Filed July 5, 1934. Serial No. 353,516. Published September 10, 1935. Class 4.

330,071. Shaving Cream. Happy Chin Company, Chicago. Filed July 12, 1934. Serial No. 353,832. Published September 10, 1935. Class 4.

330,101. Antiseptic, Germicide Deodorant. Ampere Products Company, West Orange, N. J. Filed July 16, 1935. Serial No. 367,333. Published September 10, 1935. Class 6.

330,102. Soaps. Lightfoot Schultz Co., New York and Hoboken, N. J. Filed July 16, 1935. Serial No. 367,360. Published September 10, 1935. Class 4.

330,143. Soaps. Haskins Brothers & Company, Omaha. Filed June 26, 1935. Serial No. 366,660. Published September 10, 1935. Class 4.

330,163. Cleaner and Polish. Besco Laboratories, Chicago. Filed June 24, 1935. Serial No. 366,548. Published September 10, 1935. Class 4.

330,184. Water Softener and Cleaner. Quix Products Co., Canton, Ohio. Filed February 13, 1933. Serial No. 334,932. Published July 11, 1933. Class 6.

330,229. Powdered Toilet Soap Dispensers. Lightfoot Schultz Co., New York. Filed July 16, 1935. Serial No. 367,361. Published September 17, 1935. Class 13.

330,267. Liquid and Solid Disinfectants. V. P. Adams, Inc., Jamaica, N. Y. Filed June 17, 1935. Serial No. 366,253. Published September 17, 1935. Class 6.

330,269. Germicide, Deodorant and Cleaner. Sunwash Process Co., Detroit. Filed May 20, 1935. Serial No. 365,162. Published September 17, 1935. Class 6.

330,283. Tooth Powder. Tomak Products, New York. Filed June 11, 1935. Serial No. 366,076. Published September 17, 1935. Class 6.

330,286. Germicide Low Chemical Company, New York. Filed June 12, 1935. Serial No. 366,103. Published September 10, 1935. Class 6.

330,317. Tooth Paste. Sheffield Company, New York. Filed April 20, 1935. Serial No. 364,024. Published September 17, 1935. Class 6.

330,330. Insecticide Sprayer. Midway Chemical Company, Chicago. Filed February 18, 1935. Serial No. 361,531. Published September 17, 1935. Class 23.

330,347. Boiler Cleaning Compound. San Pedro Rubber and Supply Co., Wilmington, Calif. Filed June 22, 1935. Serial No. 366,534. Published September 17, 1935. Class 6.

330,348. Moth-Proofing Liquids. Roseth Corporation, Brooklyn. Filed June 22, 1935. Serial No. 366,533. Published September 17, 1935. Class 6.

329,531. Soap, Shaving Cream. Spatz Bros., New York. Filed June 27, 1935. Serial No. 366,746. Published August 27, 1935. Class 4.

329,674. Wax for Dance Floors. John A. Schillinger, Madison, Wis. Filed June 7, 1935. Serial No. 365,917. Published August 27, 1935. Class 16.

329,698. Antiseptics and Disinfectants. John Carle & Sons, New York. Filed June 26, 1935. Serial No. 366,652. Published August 27, 1935. Class 6.

Procter & Gamble and subsidiaries for the quarter ended on Sept. 30 report net profit after depreciation, federal taxes and other charges, of $4,304,505. After setting aside $700,000 for price equalization for materials and products, net profit available for dividends was $3,604,505, which was equal, after preferred dividend requirements, to 53c a share on 6,325,087 no-par common shares. In the preceding quarter net profit after the same charges and a deduction of $835,000 for price equalization for materials and products was $3,525,858, equal to 52c a common share. In the Sept. quarter of 1934 the net profit was $4,085,461, or 61c a common share.

SOAPS FOR SILK DEGUMMING?

Olive oil soaps for silk degumming? Or some other type of soap? Or perhaps some oil or emulsion or other specialty? What improvements will come in the science of silk degumming,—or will it continue to be an art, guided by rule-of-thumb? Read "Soaps or Emulsions for Silk Degumming?" in the January issue of SOAP.

GERANIOL for SOAP

In various grades to meet every requirement as to price

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A. M. TODD COMPANY

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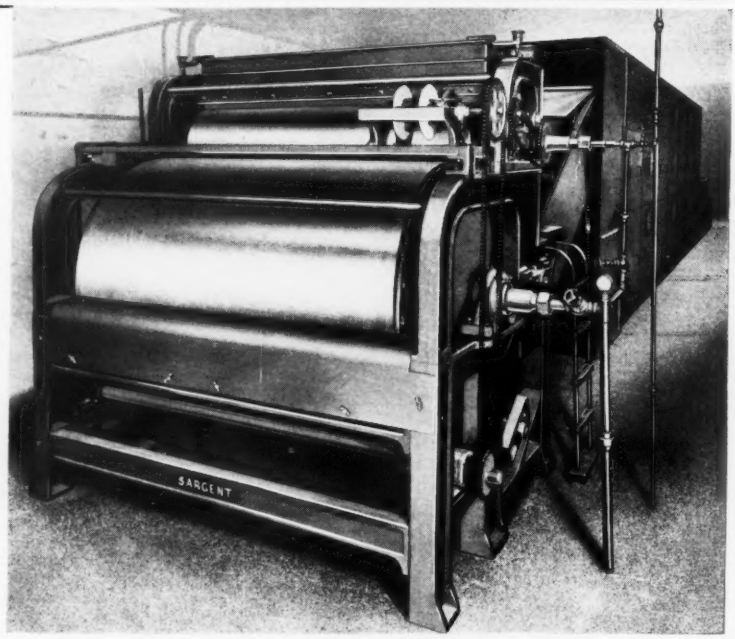
Business established in 1869

New!..

a Soap Chilling Roll and Drying Machine



AS the title indicates, the Rolls are NEW and the entire machine is NEW, many valuable improvements having been perfected until this latest Sargent development is now one of the very finest Rolls obtainable.

To the soap manufacturer, the most important angle is to have a *thin, uniform chip* . . . readily accomplished by these new Rolls being expertly machined, ground and set. Finest grade of cast iron. Vari-speed controls on both Rolls insures easy adjustment . . . every part accessible. Drive improvements reduce the horsepower used. Changes made at a minute's notice. The Dryer is entirely re-designed. Its housing gives better insulation and cuts down steam consumption per hour. Other valuable changes have been made in the circulating and exhaust air systems . . . and all *fans* are *direct motor driven.*

C. G. SARGENT'S SONS CORP. GRANITEVILLE MASS., U. S. A.

New Equipment and Bulletins

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

185. Fay Floor Machine Co., New York, has issued a new folder describing the Royal Model "Fay" electric floor machine. This unit is of medium size and is said to be particularly suitable for general floor areas.

179. Fidelity & Deposit Company of Maryland, Baltimore, has just issued a booklet with the title "Matters of Procedure Under Government Contracts." The booklet outlines the government's methods of doing business under the bid system and advises firms who enter into contracts with the government to supply materials what regulations they must comply with as well as what rights they have under federal laws covering government purchases. The author of the book, Col. O. R. McGuire, is counsel to the U. S. Comptroller General. Copies of the book are available to *Soap* subscribers.

180. Pfaltz & Bauer, Inc., New York, have just issued an eight-page folder detailing the uses of their "Falba" absorption base. It is recommended for use in brushless shaving cream, as well as in various cosmetic creams. It is said to be a highly concentrated oxycholesterin product, practically odorless and greaseless, and fourteen times as powerful as lanoline. Copies of the folder are available on request.

181. D. R. Sperry & Co., Batavia, Ill., are introducing a new lifting unit for filter-press use called the "Sperry" plate shifting device. With this device one man can easily shift even 500 lb. filter press plates, it is said.

182. J. H. Day Co., Cincinnati, has just issued a new folder illustrating and describing its "Ro-Ball" gyrating screens. Copies of the new bulletin, No. 363, may be obtained through the offices of *Soap* or by addressing the company at Cincinnati.

183. Patterson Foundry & Machine Co., East Liverpool, Ohio, has issued a new catalog showing its complete line of agitating and mixing machinery. Of special interest to soap makers are the "Patterson" crutchers and continuous feed and discharge tube mills for producing powdered soap. The company also makes ball and pebble mills, as well as the common type mixers. Copies of the catalog are available.

184. Chapman Valve Mfg. Co., Indian Orchard, Mass., is introducing a new gate valve which is guaranteed by the company for five years. The new valve, List 960, is available in all sizes from $\frac{1}{4}$" to 2" and is designed for all services up to 600 lbs. pressure at 800 F.

New Patents

Conducted by

Lancaster, Allwine & Rommel

Registered Attorneys

PATENT AND TRADE-MARK CAUSES

815 15th St., N. W., Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

Reissue **No. 19,719,** Water Softening and Washing. Patented October 8, 1935 by Ralph E. Hall, Mount Lebanon, Pa., assignor to Hall Laboratories, Inc., Pittsburgh, Pa. The process of softening water containing an alkaline-earth metal compound, which comprises adding thereto an alkali-metal metaphosphate which is water soluble and capable of sequestering calcium in a but slightly ionized condition in an amount sufficient to effectively suppress the soap-consuming alkaline-earth metal ion concentration.

No. 2,016,289, Cleaning and Scouring Material. Patented October 8, 1935 by Homer Tipton McGill, Stuttgart, Ark., assignor of one-half to Alryc U. McGill, Stuttgart, Ark. A cleaning and scouring composition comprising rice hulls and a toughening agent of the group consisting of hydrocarbon oil and glycerine impregnating the cellulose constituents of the rice hulls.

No. 2,017,327, Dry Cleaning Fluid. Patented October 15, 1935 by Frederick W. Sullivan, Jr., Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill. A dry cleaning fluid for textile fabrics comprising from about 0.1 per cent to about 2 per cent of an organic lusterizing agent selected from the group consisting of the chlorinated naphthalenes, the chlorinated anthracenes, the chlorinated diphenyls, the chlorinated diphenyl ethers and the chlorinated paraffin waxes, the organic lusterizing agent containing at least 20 per cent chlorine.

(Turn to Page 125)

"Suppliers of Raw Materials to Soap and Allied Industries for 97 Years"

IMPORTERS **DEALERS** **BROKERS**

OLIVE OIL (all grades) and OLIVE OIL FOOTS

Cottonseed Soap Stock

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Cottonseed Oil
Palm Kernel Oil
Stearic Acid
Oleo Stearine
Soya Bean Oil
Palm Kernel Oil (English or German Denatured)

Fatty Acids, Animal & Vegetable

Rapeseed Oil
Teaseed Oil
Castor Oil
Sesame Oil
Lard Oil
Palm Oil
Corn Oil
Peanut Oil
Grease (Animal)
Tallow
Red Oil
Soap Colors
Chlorophyll
Soda Ash
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Boiled-down Cottonseed Soap

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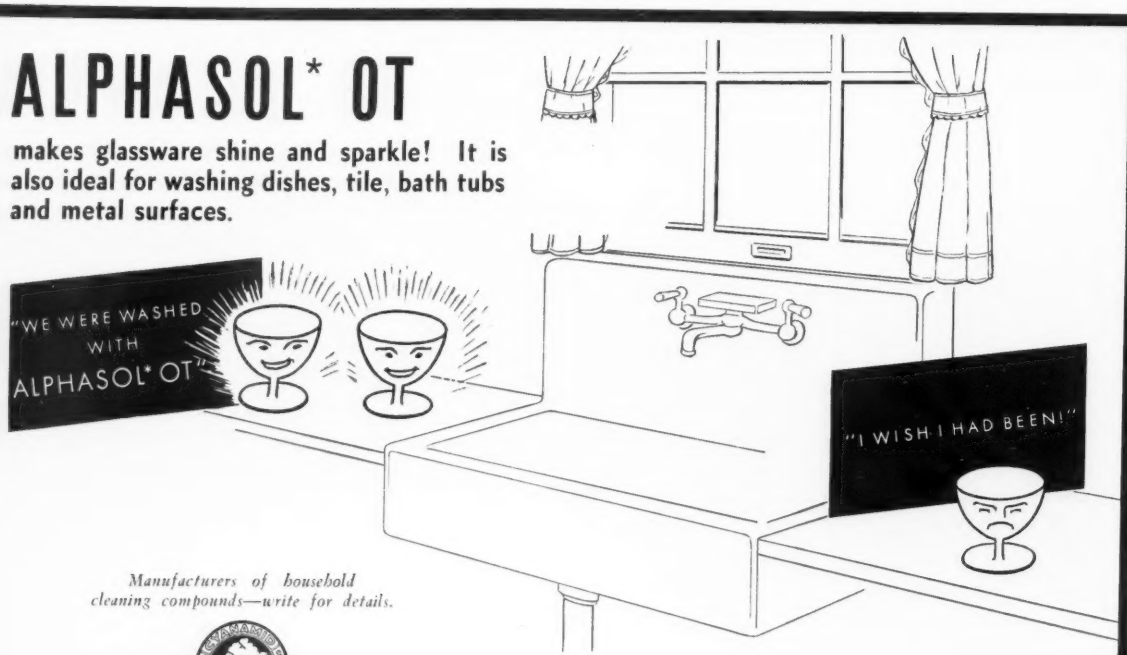
makes glassware shine and sparkle! It is also ideal for washing dishes, tile, bath tubs and metal surfaces.



Manufacturers of household cleaning compounds—write for details.

American Cyanamid & Chemical Corporation

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CONTRACTS AWARDED

In a bidding recently opened by Ft. Mason, Calif. Quartermaster, Newell-Gutradt & Co., San Francisco, has been awarded contract for a quantity of grit soap. Their low bid was 2.25c. On a quantity of laundry soap, Pioneer Soap Co., San Francisco received the award. Their bid was 3.37c per cake.

In a recent bid opened by United States Marine Corps, Washington, for 13,500 lbs. laundry soap, Colgate-Palmolive-Peet Co. was low bidder, their quotation being 3.916c per lb. Kirkman & Son was next low bidder at 3.97c.

In a recent bid opened by Post Office Dept., Washington, for 2,000 gals. floor cleaner and renovator, Baltimore Paint and Color Works, Baltimore, was low bidder, their quotation being 42.5c per gal. Other low bidders were Jas. Good, Philadelphia, 44.4c and Varcraft Works, Pottstown, Pa., 47c.

In a recent bid opened by Post Office Dept., Washington, Iowa Soap Co., Burlington, Iowa, was low bidder on 14,950 lbs. toilet soap at 6.48c per cake.

On a recent bid opened by Philadelphia Quartermaster for 10,000 lbs. naphthalene, Harwhaw Chemical Co., Philadelphia, was awarded the contract, their low bid being 6.75c.

Awards on recent bids opened by the U. S. Army Quartermaster, Fort Mason, Calif., have been made to B. T. Babbitt, Washington, for caustic soda, with a low bid of 4.46 per can and to Colgate-Palmolive-Peet Co. on laundry soap, on a bid of 3.46c per cake.

In a recent bid opened by Jefferson, Ind. Quartermaster, Cumming Distributing Co., Bloomington, Ill. was low bidder on 4,711 cans caustic soda. Their bid was 4.85c per can. Procter & Gamble Co. was low bidder on 52,200 lbs. laundry soap, their bid being 3.67c per lb. Hunnewell Soap Co., Cincinnati, was the low bidder on 3,828 cakes grit soap, with a quotation of 2½c per cake.

In a recent bid opened by Jefferson, Ind. Quartermaster, Naphthalene Products Co., Birmingham, Ala., was low bidder on a quantity of naphthalene, their bid being 5.45c. Colgate-Palmolive-Peet Co., Jersey City, N. J. was low bidder on a quantity of soap, with a bid of 3.68c. On caustic soda, Merit Supply Co., New York, was low bidder, their bid being 5.09c.

Grady Mfg. Co., L. I. City, has been licensed by Foster D. Snell, Inc., to manufacture Hull powdered metal polish under the Snell patents.

F. T. C. ACTS ON CLEANING FLUIDS

The U. S. Federal Trade Commission has been very active lately in suppressing exaggerated and improper advertising claims made by various manufacturers of cleaning fluids. Westphalia Mfg. Co. and Poly Chemical Laboratories of Jersey City have been directed to stop representing on labels affixed to the containers, or in advertisements, that their product, "Rid-O-Spot", when used for cleaning purposes, leaves no rings, or that it removes all grease spots without injury to the most delicate fabric or color. The Pyrene Manufacturing Company, of Newark, N. J., has also been ordered to cease making similar representations, in the sale of its "Pyrene" safety cleaner. Other concerns which have been the subject of recent F. T. C. stipulations include Kooper Chemical Co., X Laboratories, New York, D. Blum & Co., New York, Radiator Specialty Co., Charlotte, N. C., and Afta Solvents Corp., New York.

POSTPONE N. Y. DRUG HEARING

A brief in opposition to the proposed amendment to the New York City sanitary code was presented by the Drug, Chemical and Allied Trades Section of the New York Board of Trade at a meeting at City Hall, December 2. No further action on the amendment was taken at the meeting and the hearing was postponed indefinitely. In a recent statement Mayor LaGuardia indicated that if the drug industry showed a willingness to cooperate in the framing of a suitable federal law, New York City would probably suspend action until the Federal law could be adopted. In its brief in opposition to the proposed amendment the drug trade group indicated sympathy with the Mayor's proposal. They argued that the amendment as made goes beyond the proper field of municipal legislation, and that the matter is a more proper subject for Federal law.

Oils such as codliver or whale oil are rendered less liable to auto-oxidation by heating them, preferably under pressure, in closed containers without access to air, to 250° C. or more for at least 48 hours. The treatment may be in stages and the products may be used for soap making. If slightly hardened, edible fats may be obtained. Sigval Schmidt-Nielsen. British Patent No. 426,752.

Market Report on

TALLOW, GREASES, AND OILS

(*As of December 2, 1935*)

NEW YORK—There was less activity in the market for soap making fats and oils this period than in any period for some time. Prices showed but little change in either direction, and the volume of purchases was small. Users of fats and oils seemed anxious to avoid building up stocks prior to the inventory period and what small volume of purchasing was reported was mostly in the form of odd lots for immediate use. In spite of the lack of buying there was sufficient basic strength in the market to prevent any general decline in values. Sellers for the most part took the attitude that it was not necessary for them to press matters and settled back to wait until oil and fat users should again be in the buying mood.

COCONUT OIL

One of the few oils to reach higher levels this period was coconut oil. Sellers on the coast had bigger ideas as to values and boosted the price of coast tanks up to 4¾c per pound. Copra was also stronger in coast markets, being about a quarter of a cent per pound above previously quoted levels. New York quotations on coconut oil were unchanged.

CORN OIL

Corn oil also continued to move upward this period, against the reactionary trend of the rest of the market. Prices were firmly maintained at the higher levels, with few offerings. The ruling quotation now is 10⅛c per lb. for mill tanks, a quarter of a cent higher than the level at the beginning of the period.

GREASE

Grease quotations were off sharply, being almost a cent a pound lower, with the decline attributable to slackened buying interest. House and yellow grades are quoted currently at 6c per lb.

OLIVE OIL

Lack of buying interest prompted several reductions in quotations on olive oil this period. With consumers taking only small lots to fill current needs, quotations dropped to a basis of 83 to 84c per gallon for denatured oil. Foots were also fractionally lower and are now held at a range from 9⅛ to 9⅜c per lb.

PALM OIL

Palm oil quotations were a quarter cent a pound lower this period in a quiet market. Sellers were not disposed to press matters in the absence of buying interest. Quotations range currently between 4½ and 4¾c per lb.

TALLOW

Tallow was off half a cent a pound at the closing quotation of 6⅞c for city extra. There was little buying interest evident, nor were sellers anxious to press matters. No pressure of imported stocks was felt.

THIRD QUARTER FAT PRODUCTION

The U. S. Bureau of the Census announces that the factory production of fats and oils (exclusive of refined oils and derivatives) during the three month period ended September 30, 1935, was as follows: Vegetable oils, 456,912,777 pounds; fish oils, 67,249,035 pounds; animal fats, 275,430,469 pounds; and greases, 64,398,855 pounds—a total of 863,991,136 pounds. Of the several kinds of fats and oils covered by this inquiry, the largest production, 194,442,409 pounds, appears for cottonseed oil. Next in order is lard with 162,984,399 pounds; linseed oil with 116,666,553 pounds; tallow with 110,949,495 pounds; coconut oil with 61,569,091 pounds; corn oil with 23,297,371 pounds; soybean oil with 18,993,017 pounds; sesame oil with 17,409,769 pounds; castor oil with 10,345,410 pounds; and peanut oil with 1,466,650 pounds.

The data for the factory production and warehouse stocks of fats and oils for the three-month period appear in the following statement:

KIND	*Quarter Ended Sept. 30, 1935 Production (pounds)*	*Factory and Warehouse Stocks Sept. 30, 1935 (pounds)*
Vegetable Oils:		
Cottonseed, crude	194,442,409	74,537,279
Coconut or copra, crude	61,569,091	109,836,001
Soybean, crude	18,993,017	9,799,181
Olive, inedible	.....	2,561,695
Palm-kernel, crude	.....	31,477,186
Linseed	116,666,553	106,331,974
Palm	.....	68,144,822
Tallow, inedible	91,918,330	304,427,840
Greases	64,398,855	66,856,019
Red oil	7,227,448	5,694,740
Stearic acid	4,711,165	5,577,184
Acidulated soap stock	16,372,381	31,296,642
Miscellaneous soap stock	303,648	414,319
Corn, crude	23,297,371	13,808,495

Fats and Oils Imported for Consumption, Quarter Ended Sept. 30, 1935

	Pounds
Whale oil	5,891,528
Tallow, inedible	59,652,430
Coconut oil	78,663,327
Palm oil	80,026,015
Olive oil foots	11,629,252
Other olive oil, inedible	2,593,553
Palm-kernel oil, inedible	18,906,432

J. M. Young, assistant to the president of the American Can Co. died at Mt. Sinai Hospital, New York, December 1, after a two weeks illness. Mr. Young was 63 years of age.

Market Report on

SOAP AND DISINFECTANT CHEMICALS

(As of December 3, 1935)

NEW YORK—Most of the new contract prices have appeared over the past few weeks, and up to date few changes of any importance have been noted. As was indicated several weeks ago caustic soda and soda ash are unchanged in price from 1935 levels. The only two important changes in the chemical price list are in chlorine and bleaching powder, both of which will be slightly higher in price over 1936. A substantial advance was noted this period in prices on imported cresylic acid, and the domestic market also followed in the upward move. Even further price increases are looked for in this direction over the next few weeks.

ALKALIS

Caustic soda and soda ash will continue to be sold during 1936 at the same contract levels that have prevailed this year. Producers started their 1936 contracting a little over three weeks ago, and report normal progress to date. Bleaching powder will be priced 10c per 100 lbs. higher over 1936, the increase being attributable to the broad demand experienced for bleaching powder over recent months. The chlorine tank car price will also be 15c per 100 lbs. higher next year. Due to heavy demand chlorine has been in short supply in recent months and the advance was not at all unexpected. The tremendous increase in the number of sewage disposal and water treatment plants under P. W. A. has been the chief factor in the recent upturn in chlorine demand.

COAL TAR PRODUCTS

Due to a shortage abroad, prices on imported cresylic acid were advanced rather sharply this period, and quotations on domestic material followed up. Producers have not yet made their commitments for 1936, and the recent developments will no doubt be reflected in 1936 contract prices when they appear, which should be within the next ten days. Crude naphthalene continues to be priced higher lending added strength to the new and higher 1936 contract quotations on the refined grade.

GLYCERINE

The market was quiet and spot prices were unchanged. Contracts for 1936 supplies are currently being closed, it is reported, at about the same levels that have obtained through 1935.

NAVAL STORES

Rosin quotations dropped off this month in a quiet market. Stocks continue substantially heavier than at this time a year ago. Another meeting of producers will be held shortly to discuss a proposed marketing agreement for the 1936 season, although there is no indication that there has been any change in the sentiment of producers who at a previous session opposed such a plan for next year.

FOREIGN SOAP ARRIVALS INCREASE

The value of United States soap imports for the first 9 months of 1935 were more than double those of a like period of 1934. Details of the 9 month periods of 1934 and 1935 are shown in the following table:

	1934 (9 mos.)		1935 (9 mos.)	
	(000 omitted)			
	Pounds	*Value*	*Pounds*	*Value*
Castile	1,459	$169	1,456	$163
Toilet	318	120	410	110
Other	1,149	117	19,399	718

The general import duty on perfumed or medicated toilet soap imports into Ceylon has been increased from 25 per cent to 59 per cent ad valorem, according to a cablegram from Consul Robert L. Buell, Colombo. The preferential duty on toilet soap imported from British Empire sources remains unchanged at 15 per cent ad valorem. There are also alternative specific rates of 40 rupees per cwt. general, and 12 rupees per cwt. preferential.

C. M. Roper has been made manager of the pharmaceutical and proprietary division of the Owens-Illinois Glass Co., Toledo, succeeding Smith L. Rairdon who was recently made eastern sales manager of the company. Mr. Roper was formerly assistant manager of this division.

Dr. J. J. Durrett will return as chief of the drug division of the U. S. Food and Drug Administration early in January, after an absence of a little over four years. Since his resignation in August, 1931, he has been associated with E. R. Squibb & Sons, New York.

Blue and invisible ultraviolet light materially accelerates the development of rancidity in such materials as soaps and oil foodstuffs, whereas other visible light such as red and yellow has little effect. Consequently rancidity-retarding wrappers may be of any visible color except blue. It is believed that failure to appreciate the autocatalytic effect of small amounts of ultra-violet light transmitted by the filters used by various other investigators has been the source of the confusion and conflicting claims which have been published on the subject. Willard L. Morgan. *Ind. Eng. Chem.* **27**, 1287-90 (1935).

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1816

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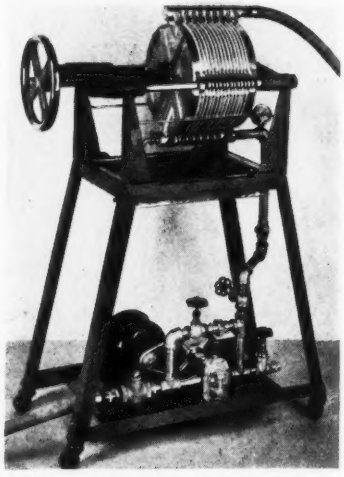

LIQUID insecticides are of two kinds—those that contain solid matter, stain and clog the sprayers, and those that have been properly filtered with an Ertel polishing filter so that they are cleaned of solid matter.

Ertel filters turn out clear and sparkling liquid soaps as well. Let us clear a sample of your cloudy liquid. Come around to 120 East 16th Street when in town for the Convention of the National Association of Insecticide and Disinfectant Manufacturers and see the new models on display at our office.

ERTEL PORTABLE MIXERS

• The inexpensive mixer for soaps, disinfectants and insecticides . . . plus a multitude of other uses. Especially ideal for incorporating colors and perfumes in your liquid products. Assures a perfect mix. Made in a large variety of sizes.

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ERTEL ENGINEERING CORPORATION
DEPT. C, 120 EAST 16th STREET NEW YORK, N. Y.

Market Report on

ESSENTIAL OILS AND AROMATICS

(*As of December* 3, 1935)

NEW YORK—Anise and cassia oils both continued their decline in the period just closed, as the Chinese currency situation remained up in the air. On the up side of the market the citrous oils continued to be a strong feature, with developments in the controversy between Italy and the League making this situation look even more serious than ever. Citronella was priced lower this period as buying interest was lacking. Another feature of the market on the up side was oil patchouli which was advanced rather sharply. Considerable damage to current crops is reported from Singapore.

ANISE OIL

Anise continued to decline through the early part of this period, but toward the close a firmer attitude on the part of primary market suppliers was encountered and the market showed a tendency to firm up around the level of 42 to 45c per lb.

BERGAMOT OIL

The bergamot oil market continued strong, with prices slightly higher at a range of from $1.90 to $2.00 per lb.

CASSIA OIL

Like anise oil, cassia continued to drop last month, but early this month gave indications that the decline might be over, at least temporarily. Prices regained five cents per lb. from the lows and hold currently at $1.15 to $1.25 per lb.

CITRONELLA OIL

With demand inactive, sellers of citronella oil have shown a very competitive disposition in recent weeks and on such inquiries as have reached the market lower quotations have been in order. Java oil is available at 28c per lb. and Ceylon three cents cheaper.

LEMON OIL

Italian oil continued very firm in price this period at the recent higher levels, and California oil profited by this strength to register a sharp gain in price early in the period.

PATCHOULI OIL

Due to floods in producing areas it is reported that the current crop of patchouli leaves has suffered severe damage. In consequence of these reports there has been a sharp advance in patchouli oil prices, and the range is now about 60c per lb. higher at $3.60 to $4.00 per lb.

—— ♦ ——

Terpineol derived from turpentine is finding a considerable application in France as a wetting agent. A solution of a few mg. of terpineol in water possesses a surface tension more than 50 per cent below that of the untreated water. Terpineol has a very low solubility in water, but with the aid of soap, stabilized emulsions of terpineol can be obtained. For emulsions to be used in agricultural preparations, it is necessary to use sulfonated fatty products instead of simple soaps, in order to obtain the desired stability. Insecticidal and fungicidal preparations containing terpineol emulsions are expected to be particularly valuable for the winter treatment of fruit trees. *Chem. Trade J.* **97**, 367 (1935).

—— ♦ ——

IDENTIFYING PERFUMES

There is an instrument that can detect a millionth of a milligram, and in some cases less, of the vapor of hundreds of kinds of organic substances. It is the human nose. But although every one is equipped with this ability to detect minute amounts of odorous substances, there is no language for conveying from one person to another an accurate description of the odors detected. In spite of the industrial importance of odor, there is no competent, universally accepted method for its characterization. To say that it's peculiar, characteristic, or pleasant, isn't really much help.

A system of classification developed forty years ago, grouped all odors into nine general classes, most of which were further subdivided. The simplest system proposed reduces types of odor to four fundamentals. These are fragrant or sweet, acid or sour, burnt or empyremautic, and caprylic or oenanthic or vinous. To express an odor more or less quantitatively, it is given a four-digit number, where the successive figures are for the four types, on the basis of 8 for the most powerful and 1 for just detectable. For example 6323 is given for *a*-terpineol, meaning 6 fragrant, 3 acid, 2 burnt, and 3 terpineol units. Whether this system will prove workable or not, at least it suggests a method of attack. The practical value of a more general and less personal description of odor is obvious. E. C. Crocker. *Ind. Eng. Chem.* **27**, 1225-8 (1935).

—— ♦ ——

Capillary-active compounds resistant to calcium hardness, which contain an aliphatic radical of high molecular weight, and a terminal group to make it water soluble, are improved by adding water-soluble salts resulting from the separation of water from orthophosphoric acid. Examples of these salts are alkali pyrophosphates, metaphosphates and polyphosphates. Henkel & Cie G.m.b.H. French Patent No. 781,142.

—— ♦ ——

Joseph T. Lea, president of E. M. Sergeant Pulp & Chemical Co., Inc., New York, died Tuesday, November 12, 1935.

KRANICH SOAPS

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Coco Oil 60%
Olive Oil 60%
Natural, Opal, Green

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Coconut..10%-15%
20%-40% Concentrate
Colored and Perfumed

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Pine-Sassafras
Plain

LIQUID SHAMPOOS
Coconut Oil-30%-45%
Olive Oil-30%
Castile-30%

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Castile U.S.P.
Coco Castile 50-50
Pure Coconut
Pure Palm

POTASH SOAPS
Soft and Hard
U.S.P. 9th and 10th

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CURRENT PRICE QUOTATIONS

(*As of December 2, 1935*)

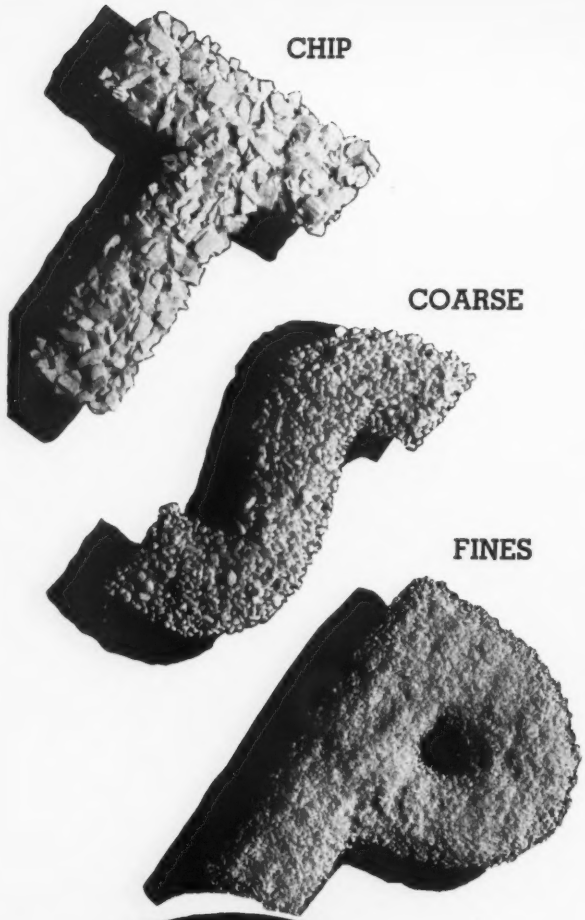
Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .11	$ .12½
Acid, Boric, bbls., 99½%	ton	95.00	100.00
Cresylic, 97½ dk., drums	gal.	.45	.46
97-99%, pale, drums	gal.	.48	.49
Low boiling grade	gal.	.64	.65
Oxalic, bbls.	lb.	.11½	.12¼
Adeps Lanae, hydrous, bbls.	lb.	.16	.18
Anhydrous, bbls.	lb.	.17	.19
Alcohol, Ethyl, U. S. P., bbls	gal.	4.16	4.28
Complete Denat., No. 5, drums, ex.	gal.	.35½	.43½
Alum. Potash lump	lb.	.03½	.03¾
Ammonia Water, 26°, drums, wks	lb.	.02½	.02¾
Ammonium Carbonate, tech., bbls	lb.	.08	.12½
Bleaching Powder, drums	100 lb.	2.25	2.60
Borax, pd., cryst., bbls., kegs	ton	50.00	55.00
Carbon Tetrachloride, car lots	lb.	—	.05¼
L. C. L.	lb.	.07	.08½
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	25.00
Cresol, U. S. P., drums	lb.	.11	.11½
Creosote Oil	gal.	.11½	.12½
Feldspar (200 to 325 mesh)	ton	14.00	15.00
Formaldehyde, bbls.	lb.	.06	.07
Fullers Earth	ton	15.00	24.00
Glycerine, C. P., drums	lb.	.14	.14½
Dynamite, drums	lb.	.13¾	.14½
Saponification, drums	lb.	.10¼	.11½
Soap lye, drums	lb.	.09¼	.09½
Hexalin, drums	lb.	—	.30
Kieselguhr, bags	ton	—	35.00
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	1.70	2.20
Mercury Bichloride, kegs	lb.	.71	.76
Naphthalene, ref. flakes, bbls.	lb.	.06¾	.07
Nitrobenzene (Myrbane) drums	lb.	.09	.11
Paradichlorbenzene, bbls., kegs	lb.	.16	.25
Petrolatum, bbls. (as to color)	lb.	.02	.07¼
Phenol, (Carbolic Acid), drums	lb.	.14¼	.16
Pine Oil, bbls	gal.	.59	.64
Potash, Caustic, drums	lb.	.06¼	.06½
Flake	lb.	.07	.07¼
Potassium Carbonate, solid	lb.	.07¼	.09½
Liquid	lb.	.03½	.03¾
Pumice Stone, powder	100 lb.	3.00	4.00
Rosins (600 lb. bbls. gross for net)—			
Grade B to H, basis 280 lbs.	bbl.	5.50	5.65
Grade K to N	bbl.	5.65	5.85
Grade WG and X	bbl.	6.30	7.00
Wood.	bbl.	4.60	5.80
Rotten Stone, pwd. bbls.	lb.	.02½	.04½
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04⅜
Olive Castile, bars	lb.	.13	.19
powder.	lb.	.23	.30
Olive Oil Foot	lb.	.07	.07½
Powdered White, U. S. P.	lb.	.19	.21
Green, U. S. P.	lb.	.06½	.08
Tallow Chips	lb.	.07¼	.07¾
Whale Oil, bbls.	lb.	.05	.06
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.23	1.50
Car lots, in bulk	100 lb.	—	$1.05
Soda Caustic, cont., wks., sld	100 lb.	—	2.60
Flake	100 lb.	—	3.00
Liquid, tanks	100 lb.	—	2.25
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	11.40	14.00
Sodium Fluoride, bbls	lb.	.07¼	.08¾
Sodium Hydrosulphite, bbls	lb.	.19	.20
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.35	1.75
Tar Acid Oils, 15-25%	gal.	.21	.24
Trisodium Phosphate, bags, bbls	lb.	.03	.03½
Zinc Oxide, lead free	lb.	.06	.06¼
Zinc Stearate, bbls	lb.	.20	.22

Oils — Fats — Greases

Castor, No. 1, bbls	lb.	.10¼	.11
No. 3, bbls	lb.	.09¾	.10½
Coconut			
Manila, tanks, N. Y.	lb.	—	.04¾
Tanks, Pacific coast	lb.	.04⅜	.04⅝
Cod, Newfoundland, bbls.	gal.	—	.35
Copra, bulk, coast	lb.	.0245	.0250
Corn, tanks, mills	lb.	—	.10⅛
Cottonseed, crude, tanks, mill	lb.	.09¼	.09½
PSY	lb.	—	Nom.
Degras, Amer., bbls.	lb.	.05¼	.06
English, bbls.	lb.	.04¾	.05½
Neutral, bbls.	lb.	.08	.11
Greases, choice white bbls., N. Y.	lb.	.06⅝	.07
Yellow	lb.	.05⅞	.06
House	lb.	.05⅞	.06
Lard, City	lb.	.14	.14¼
Compound tierces	lb.	.12¾	.13
Lard Oil,			
Extra, No. 1, bbls.	lb.	—	.12½
Extra, No. 1, bbls.	lb.	—	.10¾
No. 2, bbls.	lb.	—	.09¾
Linseed, raw, bbls., spot	lb.	.0970	.1010
Tanks, raw	lb.	—	.0910
Boiled, 5 bbls. lots	lb.	—	.1090
Menhaden, Crude, tanks, Balt	gal.	.35	Nom.
Oleo Oil, No. 1, bbls., N. Y.	lb.	—	.13¾
No. 2, bbls., N. Y.	lb.	—	.12¾
Olive, denatured, bbls., N. Y.	gal.	.83	.84
Foots, bbls., N. Y.	lb.	.09⅛	.09⅜
Palm	lb.	.04½	.04¾
Palm Kernel, casks, denatured	lb.	.04⅝	Nom.
Peanut, domestic tanks	lb.	.09½	Nom.
Red Oil, distilled bbls.	lb.	.09⅝	.10⅝
Saponified bbls.	lb.	.09⅝	.10⅝
Tanks	lb.	—	.08¾
Soya Bean, domestic tanks, N. Y.	lb.	—	.09
Stearic Acid,			
Double pressed	lb.	.10	.11
Triple pressed, bgs.	lb.	.12¾	.13¾
Stearine, oleo bbls.	lb.	.11½	.11¾
Tallow, special, f.o.b. plant	lb.	—	.06¾
City, ex. loose, f.o.b. plant	lb.	—	.06⅞
Tallow, oils, acidless, tanks, N. Y.	lb.	—	.10
Bbls., c/l N. Y.	lb.	—	.10½
Whale, refined	lb.	.07¾	.08



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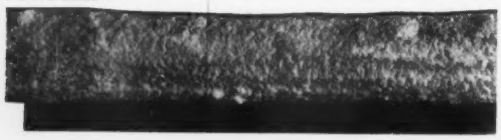

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Almond, Bitter, U. S. P.	lb.	$2.00	$2.50
Bitter, F. F. P. A.	lb.	2.25	2.75
Sweet, cans	lb.	.58	.60
Anise, cans U. S. P.	lb.	.42	.45
Apricot, Kernel, cans	lb.	.22	.25
Bay tins		1.25	1.50
Bergamot, coppers	lb.	1.90	2.00
Artificial	lb.	1.00	1.30
Birch Tar, rect. tins	lb.	.70	.75
Crude, tins	lb.	.14	.16
Bois de Rose, Brazilian	lb.	1.25	1.60
Cayenne	lb.	2.40	2.90
Cade, cans	lb.	.26	.30
Cajuput, native, tins	lb.	.50	.60
Calamus, tins	lb.	3.25	3.50
Camphor, Sassy, drums	lb.	—	.19
White, drums	lb.	—	.20
Cananga, native, tins	lb.	2.75	2.90
Rectified, tins	lb.	3.25	3.50
Caraway Seed	lb.	1.95	2.20
Cassia, Redistilled, U. S. P.	lb.	1.15	1.25
Cedar Leaf, tins	lb.	.54	.65
Cedar Wood, light, drums	lb.	.22	.27
Citronella, Java, drums	lb.	.28	.30
Citronella, Ceylon, drums	lb.	.25	.26
Cloves, U. S. P., tins	lb.	.85	.87
Eucalyptus, Austl., U. S. P., cans	lb.	.29	.32
Fennel, U. S. P., tins	lb.	1.00	1.25
Geranium, African, cans	lb.	4.90	6.75
Bourbon, tins	lb.	5.50	7.25
Hemlock, tins	lb.	.70	.75
Lavender, U. S. P., tins	lb.	3.25	7.00
Spike, Spanish, cans	lb.	1.20	2.00
Lemon, Ital., U. S. P.	lb.	1.85	2.10
Lemongrass, native, cans	lb.	.70	.80
Linaloe, Mex., cases	lb.	1.35	1.50
Nutmeg, U. S. P., tins	lb.	1.20	1.35
Orange, Sweet W. Ind., tins	lb.	2.40	2.50
Italian cop	lb.	2.75	4.00
Distilled	lb.	.70	.75
Origanum, cans, tech.	lb.	.70	.75
Patchouli	lb.	3.60	4.00
Pennyroyal, dom.	lb.	1.75	1.90
Imported	lb.	1.35	1.70
Peppermint, nat., cases	lb.	1.85	2.20
Redis., U. S. P., cases	lb.	2.10	2.30
Petit, grain, S. A., tins	lb.	1.00	1.15
Pine Needle, Siberian	lb.	.90	.95
Rose, Natural	oz.	5.50	18.00
Artificial	oz.	2.00	3.00
Rosemary, U. S. P., tins	lb.	.34	.45
Tech., lb. tins	lb.	.30	.40
Sandalwood, E. Ind., U. S. P.	lb.	5.00	5.50
Sassafras, U. S. P.	lb.	.75	1.00
Artificial	lb.	.45	.50
Spearmint, U. S. P.	lb.	1.65	1.70
Thyme, red, U. S. P.	lb.	.58	1.02
White, U. S. P.	lb.	.65	1.10
Vetivert, Bourbon	lb.	11.50	14.00
Ylang Ylang, Bourbon	lb.	4.60	7.00

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.25	$2.25
Amyl Cinnamic Aldehyde	lb.	1.75	2.50
Anethol	lb.	1.00	1.10
Benzaldehyde, tech.	lb.	.60	.65
U. S. P.	lb.	1.20	1.30
Benzyl, Acetate	lb.	.56	1.00
Alcohol	lb.	.65	1.15
Citral	lb.	2.40	2.60
Citronellal	lb.	2.05	2.50
Citronellol	lb.	2.10	2.65
Citronellyl Acetate	lb.	4.50	7.00
Coumarin	lb.	3.10	3.30
Cymene, drums	gal.	.90	1.25
Diphenyl oxide		.85	1.25
Eucalyptol, U. S. P.	lb.	.50	.55
Eugenol, U. S. P.	lb.	2.00	2.50
Geraniol, Domestic	lb.	1.00	2.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	2.00	2.50
Heliotropin	lb.	2.00	2.10
Hydroxycitronellal	lb.	3.50	9.00
Indol, C. P.	oz.	2.00	2.50
Ionone	lb.	3.60	6.50
Iso-Eugenol	lb.	3.00	4.25
Linalool	lb.	1.65	2.25
Linalyl Acetate	lb.	1.85	4.25
Menthol	lb.	3.50	3.60
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.15	3.20
Paracresol	lb.	4.50	6.00
Salicylate, U. S. P.	lb.	.40	.45
Musk Ambrette	lb.	4.75	6.00
Ketone	lb.	5.00	6.50
Xylene	lb.	1.50	2.50
Phenylacetaldehyde	lb.	4.80	8.00
Phenylacetic Acid, 1 lb., bot.	lb.	3.00	4.00
Phenylethyl Alcohol, 1 lb. bot.	lb.	4.00	4.50
Rhodinol	lb.	5.75	8.00
Safrol	lb.	.60	.62
Terpineol, C. P., 1,000 lb. drs.	lb.	.33	.35
Cans	lb.	.36	.37
Terpinyl Acetate, 25 lb. cans	lb.	.80	.90
Thymol, U. S. P.	lb.	1.40	1.50
Vanillin, U. S. P.	lb.	3.00	3.50
Yara Yara	lb.	1.30	2.00

Insecticide Materials

Insect powder, bbls.	lb.	.15	.17
Concentrated Extract			
5 to 1	gal.	1.20	1.25
20 to 1	gal.	3.85	4.00
30 to 1	gal.	5.70	6.00
Derris, powder—4%	lb.	.41	.45
Derris, powder—5%	lb.	.46	.50
Cube, powder—4%	lb.	.39	.43
Cube, powder—5%	lb.	.44	.48

Gums

Arabic, Amb. Sts.	lb.	.14	.15
White, powdered	lb.	.17	.18
Karaya, powdered No. 1	lb.	.09½	.10
Tragacanth, Aleppo, No. 1	lb.	1.20	1.25
Sorts	lb.	—	.25

Waxes

Bees, white	lb.	—	.33½
African, bgs.	lb.	.23	.24
Refined, yel.	lb.	.27	.28
Candelilla, bgs.	lb.	.16	.17
Carnauba, No. 1	lb.	.51	.52
No. 2 yel.	lb	.48	.49
No. 3, chalky	lb.	.39	.41
Ceresin yellow	lb.	.36	.38
Paraffin, ref. 125-130	lb.	.04¼	.04½

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SALAD OIL
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TEASEED OIL
WHITE OLEINE
FATTY ACIDS
STEARINE
STEARIC ACID
GREASE
TALLOW

ABC

CRESYLIC ACID

AROMATICS

PHENYL ETHYL ALCOHOL
GERANIOL
CITRONELLOL
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SEARCH FOR BY-PRODUCT FATS

(*From Page* 31)

effect of the ordinary oxidizing agents has been investigated. The usual procedure has been to use air or oxygen preferably under pressure and in the presence of some metallic catalyst. Air containing nitrogen peroxide has been used. The fatty acids prepared in this manner are generally dark and thick. A yield of about 70 per cent is obtained. It has been attempted to prepare fatty acids by the electrolysis of paraffins in a sulfuric acid emulsion in the presence of a catalyst. Yellow and greenish fatty acids are produced in this manner, and they turn rancid in less than two days.

This search for new fats has been unique, to say the least. The soaps derived from the asphaltic residue of mineral oil stills in aqueous solution have been acidified and then treated with xylene. The xylene and water are distilled off, leaving the fatty acids in the residue. These acids can then be extracted with anhydrous ethyl alcohol and recovered. Investigations like these point the way to successful future development and much is to be looked forward to.

The soap made from fats derived from the oxidation of hydrocarbons requires purification on account of the presence of monocarboxylic acid groups. This purification can be effected to some degree by blowing a current of steam into the soap contained in a closed vessel at more than 250°, removing the vapors quickly enough to permit the soap to remain anhydrous even in the presence of steam.

The determining factor in all of this raw material development is the economic situation which affects the oil and fat markets. There is sufficient cause for investigation in the events that have taken place in the past year or so, that have caused a rise of from 200 to 300 per cent in oils and fats used for soapmaking. The entire currency situation, the intensely nationalistic trends on the parts of leading nations, with all their ensuing results, tariff barriers and what not, have played havoc with the fat market, and, to all appearances, have by no means exhausted themselves. A situation of this nature is particularly significant to the soapmaking industry which is the largest single consumer of oils and fats, and since oils and fats are the biggest item in the soapmaker's budget.

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Louis Rapin, president of Antoine Chiris Co., New York, returned recently from a three months' trip to Europe, during which he visited his firm's essential oil distilling plant in Grasse, France, as well as various points in Spain.

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The index of employment in the soap industry stood at 105.4 in October, 1935, comparing with 103.1 in September and 105.7 in October, 1934. The pay-roll index registered 101.3 in October, 1935, as against 99.4 in September and 94.6 in October, 1934.

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Soaps in Silk Degumming

THE part played by soap and alkalies in the degumming of silk is best understood by first getting a clear picture of what degumming consists of. In this way the work required of the detergent and the best conditions for its use are explained. A. J. Hall in the *Am. Dyestuff Reporter* **24,** 666-7 (1935), gives a petinent discussion covering these points. In the spinning of a cocoon, the silkworm extrudes 2 threads of fibroin simultaneously, at the same time cementing these together to form a double thread with the glutinous substance sericin. Sericin is not a single substance but consists of at least 2 different types of protein, which may be called sericin A and sericin B. The proportion of sericin A and B in silk gum varies with the type of silk, but usually there is about 3 times as much sericin B as A. The total amount of sericin in raw silk varies from 20 to 30 per cent, and this represents the loss in weight which occurs in degumming.

At a suitable stage in manufacture, it is desirable to remove the gum and leave the fibroin threads in a lustrous and supple state. Since raw silk is stronger than degummed silk, it is generally better to leave the degumming process until a late stage in the manufacture of the silk goods, that is, after weaving or knitting. The method of degumming is very important, since it must be carried out without adversely affecting the silk, particularly as regards tensile strength and softness of handle.

The two types of sericin differ from the fibrin thread in that they are soluble in mild alkalies such as dilute solutions of soda ash, caustic soda, or sodium silicate. However, soap itself is a mild alkali and experience over many years has shown that a boiling soap liquor is the safest and most convenient degumming agent. It must be emphasized that not only is sericin to be removed, but removed in such a way as to leave the silk soft and elastic. If caustic soda is used for removal, the silk is left in poor condition, but if a soap solution is used, the silk retains all of its desirable properties.

During degumming the alkalinity of the solution of soap, soda ash, or sodium silicate steadily decreases. By the use of suitable color indicators, it can be shown that when the initial pH is say, 10.3, this value is reduced to about pH 8.6 at the end of the degumming process. The result is due to chemical combination between the sericin and the alkali. For this reason, decomposition of the alkaline degumming agent must occur, and the nature of the products formed must determine to some extent the resulting character of the silk.

When soap is used as degumming agent, the chemical reaction of part of its alkali leaves in suspension an equivalent proportion of free fatty acid. The latter is emulsified by unchanged soap and the resulting fatty acid-soap complex will have less adverse effect on the silk than would an alkaline solution alone. It is believed that the free fatty acid acts as a protective colloid towards the silk. Thus raw silk will have a better handle when degummed with soap than when degummed with caustic soda. The handle of silk is not harmed so much by sodium silicate as by caustic soda, but even in that case it is desirable to have soap present, or possibly a sulfonated oil.

The rate of degumming is influenced by various factors. Sericin does not combine with a constant amount of alkali during degumming. The amount of alkali taken up by the sericin decreases progressively with an increase in the initial ratio of alkali to sericin present. This relationship holds good whether caustic soda, soda ash, soap or sodium silicate is used as degumming agent. Under normal conditions of degumming, 1 gram of caustic soda appears to combine with 400 grams of sericin, in the initial stages, but toward the end of the process, only about 10 grams of sericin combine with 1 gram of alkali. The amount of sericin which can combine thus with alkali decreases with a decrease in pH of the degumming liquor.

As to practical conditions, temperature is highly important. At 130° F., the rate of degumming is exceedingly slow. At 200° F. the rate is 3 times more rapid than at 180° F. The temperature of degumming should therefore be as high as possible without adversely affecting the handle of the silk. Agitation of the degumming liquor effects a marked increase in the rate of removal of sericin. Degumming occurs about 3½ times more quickly in a moving liquor than when the goods are stationary. A boiling soap liquor is very effective both because of the high temperature and because the escaping steam keeps the mass in motion.

In general, the rate of degumming increases with an increase in pH, but this relationship appears to vary according to the degumming agent employed. Thus pH measurements will assist in controlling degumming, but pH values alone cannot be taken as a measure of the rate of degumming. With caustic soda and alkaline salts, it appears that the rate of degumming is not much influenced by their concentration in the degumming liquor, within practical limits, nor by the pH of the liquor. On the other hand, soap behaves quite differently in that the concentration and pH of the solution largely determine the rate of degumming. The effectiveness of various alkalies is rated as follows, the degumming coefficient being considered specific for each alkali:

Alkali	*Degumming Coefficient*
Caustic soda	984
Soda ash	827
Sodium silicate	427
Trisodium phosphate	349
Borax	189
Sodium bicarbonate (modified soda)	173

When a mixture of a mild alkali is used with a sulfonated oil for degumming, it is the alkali only which is effective in removing the sericin. The sulfonated oil has the effect of preserving the soft handle of the silk, producing a level dyeing silk and preventing yellowing such as occurs when an alkali alone is used. The presence of the sulfonated oil neither retards nor accelerates degumming.

The optimal concentration of soap solution to give the best degumming rate is 0.053 *N* which is about 1.5 per cent, calculated as sodium stearate. Above or below this concentration, the rate of degumming decreases. When maximum degumming is considered in conjunction with effect on tensile strength, degumming is found to be most satisfactory carried out at a pH of 9.5 to 10.5. This is pretty close to the natural alkalinity of soap solution.

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Textile assistants are produced from products which consist of polypeptides containing from 1 to 5 peptide groups, which may be obtained by hydrolyzing protein materials. The polypeptides are treated with fatty acids, sulfonic acids or similar organic materials. I. G. Farbenind. A.-G. Canadian Patent No. 353,820.

TRIETHANOLAMINE SOAPS

Commercial triethanolamine consists of a mixture of mono-, di- and triethanolamines, with the tri-compound largely predominating. Triethanolamine soaps are practically neutral and are not readily decomposed by heat. These soaps are of great value as textile detergents and in dry-cleaning, being free from deleterious effects on the most sensitive fibres. They are also efficient emulsifiers of oils, fats, waxes and associated products.

In order to prepare a neutral soap, triethanolamine may be estimated for total alkalinity by diluting an accurately weighed sample of about 5 grams to 200 cc. and titrating with *N* hydrochloric acid to a methyl orange end-point. The equivalent weight, which is specified between 137 and 142, is then equal to the weight of the sample divided by the product of the volume of acid in liters times its normality. Triethanolamine soaps are formed simply and directly by admixture with the fatty acid in combining proportions. The fatty acid is added to the nitrogen atom without detachment of the elements of water.

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Sulfonated vegetable oils have great wetting out properties and can be used as emulsifiers and detergents. When used as cleansing agents, owing to their mild action, they impart softness and luster to the material being washed. Sulfonated castor oil is frequently used as a vehicle for bringing perfumes into aqueous solution for low-priced toilet products. A simple method of making the concentrated essence for further dilution is to mix 10 parts of a specially prepared perfume compound, free from the more insoluble aromatics such as resins, terpenes, etc., with 90 parts of a high percentage sulfonated castor oil. Sulfonated castor oil is also useful in preventing precipitation in liquid soaps. Frank H. Sedgwick. *Soap, Perfumery & Cosmetics*, Oct., 1935.

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A study of the Bertram, Holde-Selim-Bleyberg, Twitchell, Kaufmann, and Grossfeld methods for determining saturated compounds in fats and oils indicates that the best method is that of Kaufmann, in the absence of linolenic acids, or that of Bertram in the absence of unsaturated acids of high molecular weight, cyclic acids and oleic acid or its isomers or homologs. The Twitchell method gave lower results than either of these two, and the Holde-Selim-Bleyberg method was still less accurate. For ordinary analysis the Grossfeld method is not recommended, but it is useful in separating binary mixtures. D. Nikitin. Trudui VNIIZh No. 2, 35-59.

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Finely ground oatmeal may be added to soap by mixing with the soap flakes perfume, color etc. just before milling. If a super-fatting agent of a pasty texture is used, the oatmeal can be ground into this and then carefully mixed with the soap flakes. In most so-called oatmeal soaps, a convenient grade of bran is used in place of oatmeal. *Soap, Perfumery & Cosmetics*, Oct., 1935.

SULFONATED OILS

(PART III)

By A. E. Sunderland

IT has been previously mentioned that in the preparation of some sulfonated oils, the secondary reaction products play an important part in the value of the product for the use to which it is to be employed. This is especially true for sulfonated castor oils. Castor oil is unique in so much that it will dissolve and mix with castor oil soap, yielding a clear oil. Also sulfonated castor oil, when boiled with water, yields besides the hydroxy acids, various polymeric ricinoleic acids. These compounds are soluble in one another and yield a clear oil, which is more or less soluble in water, according to the relative percentage of the constituents. In British Patent 8245, 1907 is described the preparation of special sulfonated oils of this character. The castor oil, or other oils, oleic acid, etc., are sulfonated in the usual manner, and after washing, and separating, the oil is boiled with water in an open vessel, until the sulfo compounds are decomposed with the formation of hydroxy compounds. These hydroxy compounds are then mixed in various proportions with castor oil, and the mixture heated from 40°-100° C. The mixture is allowed to cool, being then sulfonated, washed, and neutralized in the usual manner.

The above is rather a lengthy process, and a considerably modified attempt to obtain the same result, is carried out as follows: In a lead lined tank, equipped with a very efficient stirring apparatus, are placed 5,000 lbs. castor oil. To this is added very slowly 1,100 lbs. sulfuric acid, 66° Baume, = 93-94 per cent H_2SO_4. The starting temperature should be as low as possible, but not below 60° F. During the sulfonation process the temperature should not exceed 90° F. The acid is run in drop by drop under very good mixing so that any overheating is carefully avoided. It takes from 8 to 10 hours to run the acid in. After all acid is in, the mixture is agitated for at least another hour and left standing until the next morning.

The wash tank is provided with one lead coil for air, and another for steam, so that the sour oil can be well agitated. The mixed acid and oil is mixed in the lead lined wash tank, with air and steam fittings as previously mentioned, with a solution of Glauber's salt, (600 lbs. Glauber's salt crystals to 3800-4000 lbs. water), and heated to about 95° F. This wash water is usually prepared the day before and only heated to the required temperature in the morning. The oil and Glauber's salt solution are mixed for 4-5 hours, and the temperature gradually raised to 130-140° F. The mass now forms an almost homogenous white paste, and is left to stand overnight. The next morning the separation of the acid oil, and the acid salt water is nearly complete, and the water is drawn off. The acid oil is neutralized with caustic soda until nearly neutral, and if the oil is to be used for textile purposes, it is finally cleared with more caustic soda solution, but if it is intended to be used for leather oiling, it is finally cleared with ammonia. Oils prepared in this way are more viscous and are not precipitated by lime salts. They are also reported fast to acetic acid, and dilute mineral acid.

THE sulfonated oil which is used to the greatest extent is sulfonated castor oil. This is due principally to the fact that it is one of the most satisfactory oils to sulfonate. It has also the advantage that it yields an oil of a very light color and also it does not oxidize readily. There are many varieties of sulfonated castor oil on the market. They are usually specified as 75 per cent, and 50 per cent sulfonated castor oil. This usually means that they contain 25 per cent or 50 per cent water, the difference being anhydrous sulfonated oil and salts. In some cases the amount of organically combined SO_3, is also specified.

It should however be noted, that the amount of organically combined SO_3 has very little bearing upon the value of the product for the bulk of the processes used in wetting out, dyeing, and finishing of textile fabrics made from cellulose fibers, such as cotton, linen, and rayon. The amount of soap has a greater influence on the wetting out and dyeing qualities of the oil, and for finishing and softening, the percentage of neutral oil is the predominating influence. For this reason, it is customary, to blend sulfonated castor oil with castor oil soap, or raw castor oil, for use for special purposes, or else to so regulate the sulfonation that the finished oil is more or less constituted to contain the increased percentage of soap, or raw oil necessary to give the best results for the particular purpose for which the oil is intended.

When color of the oil is not a prime requisite, cheaper oils can be made by blending sulfonated castor oil with other sulfonated oils such as sulfonated corn oil, sulfonated olive oil, sulfonated cottonseed oil, etc., which have similar properties to sulfonated castor oil and are more economical. Sometimes these are bleached by means of sodium hypochlorite, or sodium peroxide. These oils are sometimes called turkey red oils to distinguish them from pure sulfonated castor oil, although turkey red oil was many years ago the original name for sulfonated castor oil.

Another sulfonated oil which has valuable properties is sulfonated olive oil. On account of the low price of

olive oil during the past few years, sulfonated olive oil has been extensively tried out for textile processing and has been found excellent for cotton finishing and silk soaking. Sulfonated neatsfoot oil is another oil used extensively in textile processes, also sulfonated cocoanut oil, although the latter has the disadvantage of leaving a rancid smell in the goods if left in for any considerable period of time. This also applies to sulfonated cottonseed oil, but on account of high sulfonated cottonseed oil being able to mix with raw animal and vegetable oils in almost equal quantities, giving a clear oil without separation, many textile oils such as so called soluble olive oils, etc. are made with sulfonated cottonseed oil and olive oil.

Sperm oil, because of its unique chemical composition, is in a class by itself. It is readily sulfonated, giving sulfonated oils which dissolve clear in water. When mixed with other oils either animal or vegetable and then sulfonated, the resulting sulfonated oils possess many special qualities which make them valuable for particular operations in textile, and leather processing.

The fish oils, namely whale oil, cod oil, blubber oil, menhaden oil, japanese herring oil, etc., when sulfonated, are used almost exclusively in the preparation of oils for use in the treatment of leather, skins, and furs. These oils should be stored, or tanked as it is termed, for a considerable length of time so as to allow complete separation of all extraneous matter. It is advisable to make a sulfonating trial on a small scale in the laboratory with acids of different strengths, because some of these oils can be sulfonated by sulfuric acid of weaker strength, whereas, sulfuric acid of 6° B. strength would only produce excessive heating and charring.

IT is outside the scope of this paper to deal with the various blendings of sulfonated oils with other oils for industrial applications, so we think it will be better to conclude with an outline of the various tests used in the estimation of sulfonated oils, and their mixtures.

Moisture: If a large amount of sample is available, the moisture is best determined by the Xylol Method. Ten grams of the oil are mixed with 50 cc of xylol, in a 250 cc round or Erlenmeyer flask. Add to this a few ccs of oleic acid to prevent foaming and a few pieces of pumice or broken glass to prevent bumping. The flask is connected to a special Y shaped collecting tube, the other end of which is connected to an upright, straight tube condenser.

The xylol and oil mixture is boiled, and the condensed vapors collect in the side arm of the Y shaped tube, which is graduated in tenths of a cc. The water separates out at the bottom of the tube, and the percentage can be directly read off by the graduations. In making the test, the boiling is continued, until the xylol above the water is clear. The boiling usually takes thirty minutes.

2. If the sample available is only small, weigh out 1-2 grams of the oil into a 50 cc beaker, containing about 5-8 grams of dry oleic acid, and also a glass rod. The beaker is then carefully heated on the electric hot plate, until all moisture is driven off which is indicated by the cessation of the emission of steam bubbles. The beaker is cooled in the desiccator, and then weighed. The loss in weight is the amount of moisture.

Free Fatty Acid: Five grams of the oil are weighed into a 100 cc beaker, and 50 cc of neutral alcohol added. It is gently warmed if particles do not dissolve. Before titrating, the solution is cooled. It is then titrated with N/2 caustic potash solution, using phenolphthalein indicator, until a faint pink color appears.

1cc N/2 KOH = 0.141 Oleic Acid

Total Alkali:—10 grams of the oil are weighed into a 500 cc Erlenmeyer flash, and dissolved in 50 ccs of sulfuric ether. To this is added 50 cc of a neutral concentrated solution of sodium chloride. A few drops of methyl orange are added, and the solution titrated with N/2 hydrochloric acid, the flask being well shaken during the titration. The titration is continued until the salt solution shows a faint pink color.

1cc N/2 HCl = 0.028 KOH

Fat as Soaps—The percentage of KOH from the above titration multiplied by five, gives the percentage of fat combined as soap in terms of oleic acid.

Neutral Oil:—The solution from the determination of the free fatty acid, is diluted with water, until it contains about 50 per cent of alcohol. It is transferred to a separatory funnel, and extracted with petroleum ether, three or four times. The petroleum ether washings are collected together in a clean separatory funnel and washed with a mixture of equal parts of alcohol and water containing a little phenolphthalein, until the alcohol washings are free from color. The petroleum ether is then transferred to a tared wide mouth distillation flask, the ether distilled off, and the extract dried at 100-105° C, and weighed.

Ash:—Weigh from 5-10 grams of oil into a porcelain crucible. Ignite gently, allowing the oil to burn until consumed. Now apply a strong heat until all carbon is burnt. Cool in desiccator, end weigh.

Inorganic Sulfur Trioxide:—The SO_3 present as ammonium or sodium sulfate is determined by treating 10 grams of the oil with 50 cc of a saturated sodium chloride solution, (free from sulfates). Stir for 15 minutes, and filter through a moist filter paper. Wash well with the saturated salt solution, and to the filtrate add excess hydrochloric acid. Heat to boiling, add barium chloride solution, allow to stand 30 minutes, filter, wash with water, until the washings give no opalescence with a few drops of silver nitrate. Ignite to constant weight, and weigh.

Organically Combined Sulfur Trioxide:—10 grams of the sulfonated oil are weighed into a 500 cc Erlenmeyer flask, and 25 cc of normal sulfuric acid added. After adding a few pieces of pumice stone to prevent bumping the flask is connected with a reflux condenser, and the contents boiled for one hour. Occasional shaking is recommended to help complete mixing, and decomposition of the sulfo-fatty acids.

When flask and contents are completely cooled, the condenser is rinsed with water, and sulfuric ether put into

the flask. 50 cc more sulfuric ether are added to the flask, and 20 grams of salt (neutral) added, and the whole titrated with N/2 KOH., using methyl orange indicator. The number of ccs used indicate the amount of KOH needed to neutralize the 25 cc N/1 sulfuric acid, plus the sulfuric acid split off from the oil, minus the acid neutralized by the alkali as soap in the oil. The latter quantity is obtained from the titration of the total alkali, as outlined previously. Then

1 cc N/2 KOH = 28.05 milligrams KOH

(ccs N/2 KOH taken — 50) + ccs taken for total alkali titration = ccs used for organically combined sulfur trioxide.

$$\text{Percentage } SO_3 = \frac{\text{ccs (1)} \times 8}{561}$$

The above methods of estimating the combined SO_3 are accurate and sufficient for the majority of sulfonated oils, but there are some sufonated aliphatic compounds on the market, resembling sulfonated oils in their physical appearance, which cannot be determined by the above method. A gravimetric method has been devised for the determination of the SO_3, in these compounds which consists in the separation of the pure sulfonated oil, and then determining the SO_3, by careful ignition of the residue. Details of this method have been worked out by J. Hart, and published.

In conclusion, one cannot do better than quote some of the uses of sulfonated oils.

1. Practically every type of water insoluble solvent or lubricant can be made soluble or emulsified by mixture with a sulfonated oil.
2. Extensively used as a wetting out agent.
3. Used for the mixing of colors for printing pastes.
4. Used for mixing with vat dyes, to form a paste, which is more easily and uniformly reduced by the hydrosulfite.
5. Softening of textiles, applied in the dye bath or last rinse.
6. Softener for warp sizing.
7. Used for the retention of moisture or conditioning in textile threads and fabrics.
8. Used for retaining flexibility in glue, and adhesive coated papers.
9. Used for the suspension of delustering pigments, for delustering knit wear fabrics.
10. Used for the preparation of shampoos, shaving creams, and water soluble perfumes.
11. Used for the preparation of disinfectants, and as a spreader for oil sprays and other insecticides.

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Trichlorethylene has made rapid headway in England as a dry-cleaning fluid to replace inflammable solvents. It has powerful grease-solvent properties and attacks a wide range of stains, besides having the further practical value of being non-corrosive to equipment. Imperial Chemical Industries Ltd. markets the solvent for dry-cleaning purposes under the trade name "Triklone." *Chem. Age*, **33**, 418 (1935).

BRITISH STANDARDS FOR OILS

New British Standard Specifications have recently been issued for a limited number of vegetable oils, as follows: Coconut oil shall not contain more than 0.25 per cent of total volatile matter; its refractive index for the D line at 40° C. shall be between 1.4485 and 1.4492; the Wijs iodine value shall lie between 7.0 and 9.5; the saponification value shall not be lower than 255; unsaponifiable matter shall not exceed 0.8 per cent. Acidity is not to exceed the equivalent of 5.0 per cent of free fatty acid, calculated as lauric acid, except in certain seasons, when the limit shall be agreed on between producer and vendor.

Peanut oil shall be the product obtained by expression from peanuts, and shall be free from admixture with other oils and fats. The specific gravity of the oil at 15.5°/15.5° C. shall not be lower than 0.917 nor higher than 0.919. The refractive index for the D line at 20° C. shall lie between 1.470 and 1.472. The Wijs iodine value shall lie between 85 and 99. The saponification value shall not be lower than 188. Unsaponifiable matter shall not exceed 0.8 per cent. The oil shall be free from mineral and added organic acids.

Rape seed oil should have the following constants: Specific gravity at 15.5°/15.5° C. between 0.913 and 0.916; refractive index for the D line at 20° C. between 1.4720 and 1.4735; Wijs iodine value between 97 and 107; saponification value between 170 and 178; acidity, unless otherwise agreed upon, not to exceed 2.0 per cent of free fatty acid calculated as oleic acid; unsaponifiable matter, not more than 1.5 per cent; viscosity on the Redwood scale not lower than 390 at 70° F. (0.917 poise); flash point (Pensky-Martens) not lower than 400° F. *Chem Trade J.* **97**, 410-11 (1935).

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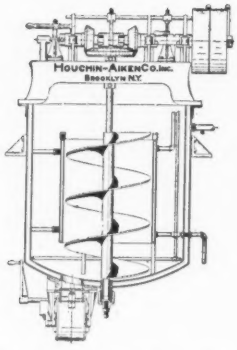
The oxygen of the air, moisture and light cause oxidation processes in fats and oils without necessarily any trace of fat-splitting. The action of diffused daylight is weak, while that of direct sunlight is much more rapid. Fats and oils should be carefully protected not only from bacteria but also from the action of light, air and moisture. It is recommended that with large amounts of fats and oils, for lengthy cold storage, they be tested for beginning oxidation and fat-splitting. If these tests are positive, precautions must be taken to keep the fats and oils at -10° C. or lower, with careful protection from light and air. L. M. Horovitz-Vlasova, E. E. Kachanova and A. D. Tkachev. *Z. Untersuch. Lebensm.* **69**, 409-21 (1935).

DRY CLEANING SOAPS

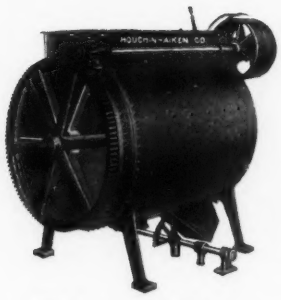
Is the trend toward chlorinated solvents in dry cleaning,—and if so, what is likely to be the effects on present dry cleaning soap manufacture? Read "Dry Cleaning Soaps, and Solvents" by S. W. Putnam in the next issue of SOAP.

NEW and *USED*
HOUCHIN SOAP MACHINERY

Perfection Crutcher
Sliding Gate Valve



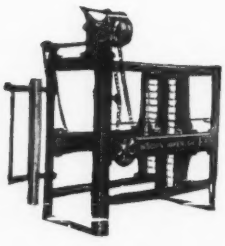
Perfection Crutcher Cross
Section View Plunger
Type Valve



Horizontal Crutcher

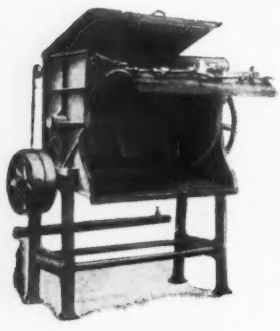
Empire State
Press

Standard
Soap Frame

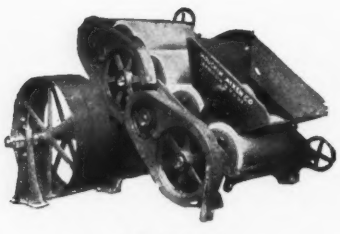


Automatic Power
Slabber

Automatic Power Cutting
Table



Ideal Amalgamator



4-Roll Mill
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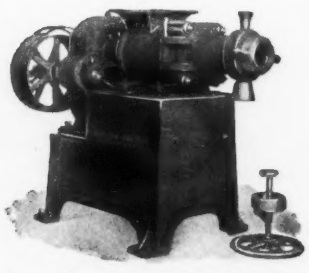

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THE BELLIER NUMBER

The Bellier number is the temperature of initial crystallization of the solid acids of a fat or oil in alcoholic solution, when the solution is gradually cooled with constant agitation. To determine this value, add to 1 cc. of well-clarified sample 5 cc. of an alcoholic solution of potassium hydroxide containing 75 grams per liter, saponify by careful heating, using an air-cooled reflux condenser, cool to 30-5° C., add 1.5 cc. of 1:2 acetic acid and 50 cc. of 70 per cent alcohol. Close the tube with a stopper carrying a thermometer and note the temperature at which the solution becomes cloudy through crystallization. The test may be repeated on the same portion of sample by raising the temperature 15-20° above the clouding point. The Bellier number of peanut oil is generally given as 40± 1° C., and that of pure olive oil as 11.8-14.5°. Values found for olive oils of known purity were 9.5-18°. By drawing a curve of the Bellier number of mixtures of peanut and olive oils, adulteration of olive oil by peanut oil can be detected and determined. The quantitative composition of a mixture of solid acids, the nature of which is known, can be obtained by determining the Bellier number and comparing with curves prepared from the Bellier numbers of known mixtures of the same acids. R. Marcille, *14th Congr. chim. ind.*, Paris, 13 pp.

—— ♦ ——

Condensation products of partially hydrolyzed proteins and higher fatty acids are valuable aids for improving shampoo compositions. H. Janistyn. *Seifensieder-Ztg.* **62,** 513 (1935).

—— ♦ ——

Sulfonic acids useful as wetting and emulsifying agents are obtained as follows: Mixtures of higher mineral-oil hydrocarbons and aliphatic alcohols or carboxylic acids containing not more than 10 carbon atoms, are treated at 35° C. with 100-200 per cent of a strong sulfonating and dehydrating reagent such as a halosulfonic acid. Oranienburger chem. Fab. A.-G. German Patent No. 614,227.

—— ♦ ——

In washing the proteins in sunflower oil cake to separate the oil, the results obtained with a given anion are not constant but depend on the reaction of the medium. The treatment is best carried out in a neutral medium. The minimum amount of water required is 4 times the volume of the oil cake. Best results are obtained by the use of sulfate and silicate anions and boiling for 2-4 hours. Chloride ion gives the poorest results. Maximum separation of oil is obtained with a 4 per cent solution of iron sulfate. N. Belyaev. *Chimie & industrie* **34,** 403.

—— ♦ ——

Wetting and emulsifying agents are obtained from mixtures of higher mineral-oil hydrocarbons with aliphatic or aromatic aldehydes containing not more than 10 carbon atoms. The mixtures are treated at about 35° C. with 100-200 per cent of a strong sulfonating and dehydrating agent such as halosulfonic acid. Sulfonic acids are obtained. Oranienburger chem. Fab. A.-G. German Patent No. 616,321.

BENTONITE IN SOAPS

The early settlers of Wyoming found occasional spots in the ground which they called "soap-holes." They were filled with a jelly-like mass which never dried and which had the appearance and feel of soft soap. These "soap-holes" were found to be connected with deposits of a peculiar light colored clay which swelled remarkably in water and possessed many unusual properties. This clay became known as bentonite. Its particles possess negative polarity. This gives the material value in laundry work and other washing processes, in removing carbon and carbonaceous soil, since the latter carry positive charges. The carbonaceous material is strongly attracted to the bentonite particles and carried away in the suspended state in the water. This adsorbent property also makes bentonite a useful agent in insecticides and many other types of products. It serves as a dispersing agent to disperse other substances in an extremely finely divided or colloidal state.

Bentonite is widely used in stabilizing emulsions of substances immiscible with water. It is more stable than soap for this purpose, and is less affected by chemical changes in the solution. It is sometimes combined with soap as an emulsifying agent, less soap then being used than would be required if used alone. Alkali tends to destroy the suspending power of bentonite if added to a liquid before the bentonite. If bentonite is added first, and alkali afterward, the viscosity of the liquid increases greatly. Acids and salts, as well as alkalies, tend to cause flocculation if present in the water to which bentonite is added.

Bentonite can be combined with any of the usual oils, fats and rosins used in soap stock, and may be added in proportions up to 40 per cent. Three general methods of incorporation are used. (1) The soap is made in the usual way, and the requisite amount of dry powdered bentonite is crutched in later. (2) Dry powdered bentonite is added to the melted fats in the soap pan, prior to the alkali. (3) The bentonite is dispersed in hot water and the melted fats stirred into it. The alkali is added last.

The third method has special advantages. The reaction with alkali is effected more rapidly and completely when intimate contact is brought about between the fat, oil and water. Even in a simple mixture, the fats are more evenly and completely dispersed when bentonite is included. If the mixture can be rapidly agitated an excellent emulsion will result, the fat or oil being dispersed in tiny globules which will not coalesce. As a result, the fats will present greatly increased surface area to the water and alkali, and in addition to the speedier and more uniform reaction, the correct proportion of alkali can be more accurately gauged. *Chem. Age* **33,** 419-20 (1935).

—— ♦ ——

Colloidal sulfite cellulose may be added in a proportion of 70 per cent to the usual soap-making ingredients. Alajos Zartler. Hungarian Patent No. 112,640.

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—— ♦ ——

A rapid bleaching of liquid toilet soaps is accomplished by dissolving the soap paste containing 30-35 per cent of fatty acids in 95 per cent alcohol and treating with sodium sulfate-free aluminum hydroxide freshly precipitated from aluminum sulfate by means of caustic soda. The addition of aluminum hydroxide aids a rapid sedimentation of impurities. When sedimentation is complete the soap is decanted, and a fresh batch of soap is added directly to the residue without further addition of aluminum hydroxide. After 12-15 treatments the aluminum hydroxide is recovered from the residue as aluminum sulfate by treatment with sulfuric acid, with simultaneous liberation of the fatty acids contained in the residue. The residue may also be used for the preparation of hard soap by treatment with caustic soda, the potassium soaps being converted into sodium soaps and the aluminum hydroxide into aluminates which pass into the wash waters. K. Lukin. *Chimie & industrie* **34,** 402-3.

—— ♦ ——

Solid soap containing a high proportion, i.e. up to 80 per cent, of pine oil is prepared by treating pine oil at a temperature of 80-100° C., with a solid alkali hydroxide. The product is neutralized by reaction with a fatty acid or its glyceride. The soap has good wetting properties and is particularly useful in washing wool. Johannes Mehne. German Patent No. 616,029.

—— ♦ ——

In the Bogdanov continuous process of soap manufacture the fatty acids come into contact with powdered anhydrous soda ash, which necessitates appropriate mechanical treatment. The best results are obtained by the simultaneous use of powdered soda ash and a 40-45° Be. caustic soda liquor, the relative proportions being such that the excess alkali in the soap always consists mostly of soda ash and not of modified soda, i.e. sodium bicarbonate. The presence of auxiliary materials such as rosin, naphthenic soaps, etc., in amounts up to 30 per cent offers no difficulties. Larger amounts decrease the hardness and darken the color of the soap. The process permits incorporating into the soap an amount of builder or alkaline salt corresponding to the requirements of the theory of detergents. To render the mass more homogeneous and plastic, it is advisable to add 10-12 per cent of water. With more than 15 per cent of water, in the presence of a large amount of soda ash, the latter separates out at the surface of the soap and reduces its hardness. G. Bogdanov and E. Elisafova. *Chimie & industrie* **34,** 403-4.

—— ♦ ——

A washing compound to be used in the canning industry which cleans the greatest surface is a mixture of 2.8 parts of caustic soda, 0.2 part of soap, 14.1 part of water glass, and 4.8 parts of sodium hypochlorite containing 2.3 per cent of chlorine. This mixture has some corrosive action. For general use, a mixture consisting essentially of soda ash and water glass, with a little soap, is effective for cleaning both tin plate and sheet aluminum. Erling Mathiesen and Erling Mikkelsen. *Tids. Hermetkind.* **20,** 185-92.

—— ♦ ——

In a study of the effect of solutions of dilute caustic soda, trisodium phosphate, soda ash, sodium metasilicate and more siliceous silicates on aluminum, copper, tin and zinc, it was found that the silicates impaired the surface of the metals less than the other alkaline detergents, except in the case of soda ash on zinc. The more siliceous silicates gave greater protection than sodium metasilicate. Chester L. Baker. *Ind. Eng. Chem.* **27,** 1358-64 (1935).

—— ♦ ——

Compositions for cleansing the skin without the aid of additional water are prepared by heating starch or a starch material with aqueous caustic alkali and trisodium phosphate, and incorporating sawdust, pumice or like material into the gelatinous product. Johann Bertram. German Patent No. 616,443.

—— ♦ ——

Trials to develop a method for detecting tea-seed oil in olive oil based on the melting-point difference were not successful. The special color reactions for tea-seed oil recommended in the literature are incorrect or unreliable. An unsuccessful attempt was made to explain the smoky taste and odor of commercial tea-seed oils; it was found that a possible admixture of Chinese black tea could not have been the cause. J. Pritzker and Robert Jungkunz. *Z. Untersuch. Lebensm.* **69,** 542-7 (1935).

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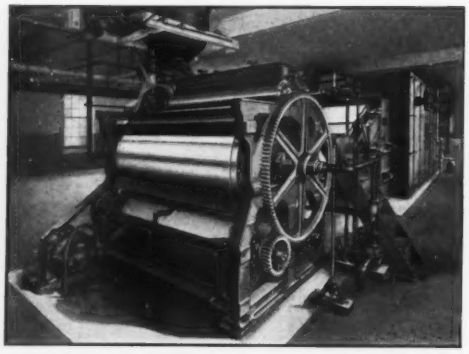

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Cleansing agents are made by sulfonating halogenated higher aliphatic hydrocarbons or halogenated fats or fatty acids. Other reactive materials such as phenol may be added to the sulfonation mixture. Oranienburger chem. Fab. A.-G. German Patent No. 616,055.

◆

Cottonseed, perilla, castor, soybean, tung, sesame, linseed and Hempseed oils are cracked with anhydrous aluminum chloride. The yield varies from 23 per cent with sesame oil to 32 per cent with castor oil, by volume, of light oil with a boiling point up to 250° C. K. Ping. *J. Chinese Chem. Soc.* **3,** 281-7 (1935).

LATHERING POWER OF SOAPS

A soap producing a profuse, semiclose and moderately stable lather is generally taken to be a good one. Results are reported on the lathering power of various types of soap by P. N. Das Gupta in the *Indian Soap Journal* **2,** 2-3 (1935). The method used was to measure the volume of foam formed under standard conditions of shaking in a 50 cc., stoppered, graduated cylinder. The figures in the following table give the volume of lather in cc. remaining at the end of the time indicated. The letters l. s. stand for lather subsiding.

	Time in Minutes							
	1	5	10	15	20	30	60	Remarks
Castor	22.5	19.0	15.5	10.5	8.5	7.0	5.5	Semiclose lasting lather
Coconut	30.0	l. s.						Profuse open lather, subsides rapidly
Linseed	22.5	5.0	0.5	l. s.				Semiclose lather
Olive	11.0	6.0	2.5	1.5	1.5	l. s.		Semiclose lather
Sesame	24.0	3.5	1.0	l. s.				Semiclose lather, moderately profuse
Peanut	17.0	13.0	4.5	2.5	1.5	0.5	none	Lather not profuse but closer than olive
Cottonseed	22.5	4.0	3.0	2.0	1.0	l. s.		Semiclose lather, moderately profuse
Kapok	11.0	2.0	1.0	l. s.				Lather open but not profuse
Mowra	22.5	4.5	1.5	1.0	1.0	l. s.	.	Semiclose lather, moderately profuse
Palm	30.5	25.5	24.0	23.0	22.0	21.0	18.5	Close lasting lather
Tallow, mutton	31.0	24.0	22.0	20.5	19.5	18.5	17.0	Close lasting lather
Tallow, beef	25.0	19.0	17.5	15.5	15.0	14.5	13.0	Close lasting lather

Kinetic experiments using conductivity differences indicated that in the beginning, the saponification of fats in alcoholic solution is neither unimolecular nor bimolecular. Only when the main quantity of the low-molecular fatty acid esters is saponified, does the reaction become constant. As a result of the kinetic experiments, which indicated a considerable variation in the saponification velocities, a practical method was developed to detect adulteration, based on the determination of conductivity differences. Fats with a high content of low-molecular fatty acids such as butyric, lauric and myristic acids, show higher saponification velocities. Oils which contain much unsaturated fatty acid are saponified more rapidly than fats which contain mainly stearic and palmitic acids. R. Strohecker. *Z. Untersuch. Lebensm.* **69,** 521-41 (1935).

◆

In the determination of the hexabromide number of fats or oils, higher results are obtained when the hexabromides, either of the glycerides or of the free acids, are precipitated in the absence of acetic acid than when they are precipitated in the presence of acetic acid. This is explained by assuming that in the presence of acetic acid only the bromides of *a*-linolenic acid are precipitated, while in the absence of acetic acid there are also precipitated the bromides of an isomer which may be called *B*-linolenic acid. L. Margaillan and M. Carriere. *14th Congr. chim. ind.*, Paris, 2 pp.

◆

Tentative methods have been suggested for producing amorphous stearic acid from a mixture of cottonseed oil and bone fat, and for producing oleic acid by replacing cottonseed oil in part by sunflowerseed oil. T. Egupov. *Masloboino Zhirovoe Delo* **11,** 226-8 (1935).

The tallows were Indian tallows. Palm oil and tallow soaps produce close lasting lather, and coconut oil soap an unstable, voluminous open lather. The palm oil or tallow soap lather can therefore be improved by adding a certain amount of coconut oil. After coconut oil, sesame, mowra, castor, cottonseed and linseed oil soaps produce semiclose lather. A number of soap makers use one or more of the latter in place of coconut oil for combination with palm oil or tallow.

◆

Diglycol laurate, a product said to replace sulfonated oils as a wetting agent, is recommended by the manufacturers as a dry-cleaning soap. They claim that it will dissolve quickly and clearly in all dry-cleaning solvents, that it will not build up a pressure on the filters, and that it possesses high detergent value.

◆

The component fatty acids of unbleached Japan wax free from kernel oil, consist of about 77 per cent palmitic, 5 per cent stearic plus arachidic, 12 per cent oleic, a trace of linoleic and 6 per cent of dibasic acids. Myristic, hexadecenoic, linolenic and volatile lower acids appear to be absent. The relative amounts of the free fatty acids are similar except that there is a far larger proportion of oleic acid. Mitsumaru Tsujimoto. *Bull. Chem. Soc. Japan* **10,** 212-9 (1935).

◆

The melting points and freezing points of the fatty acids of Spanish tallow are in general higher, and the iodine numbers lower than in tallow from other countries. The mixed fatty acids contain the remarkably high figure of 57-73 per cent of solid fatty acids. L. Le Boucher and F. de A. Bosch. *Anales soc. espan. fis. quim.* **33,** 381-8 (1935).

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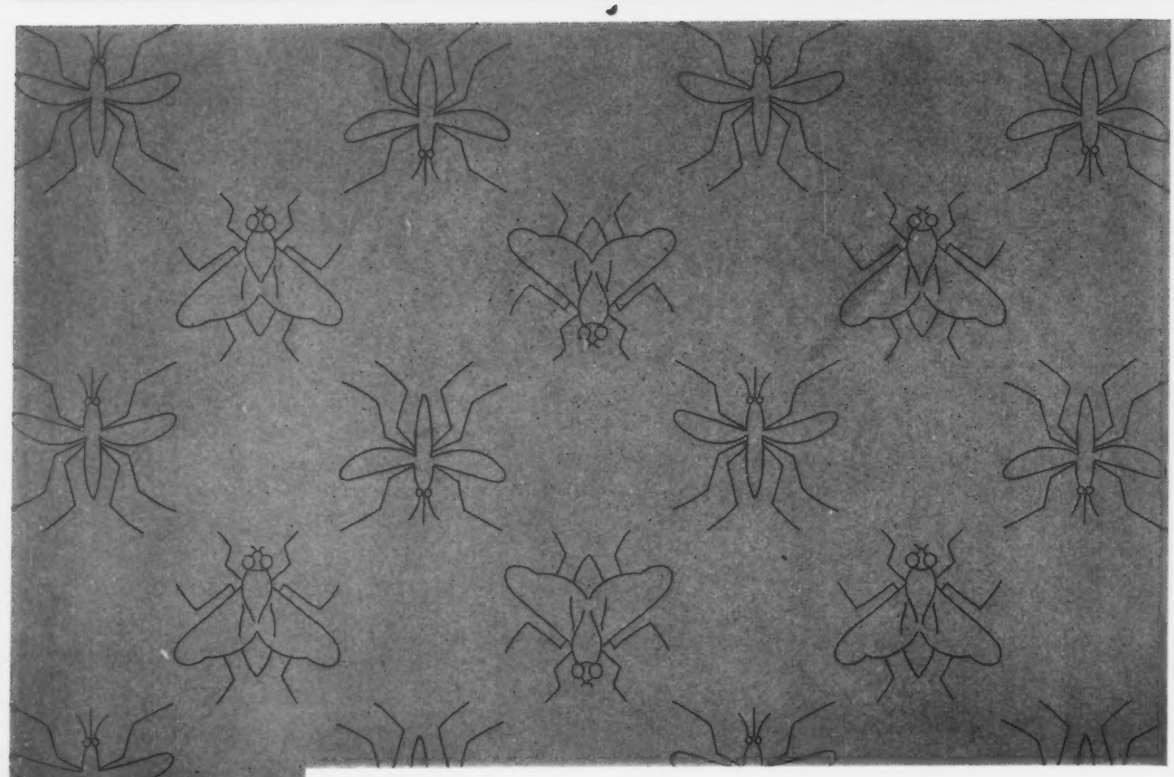

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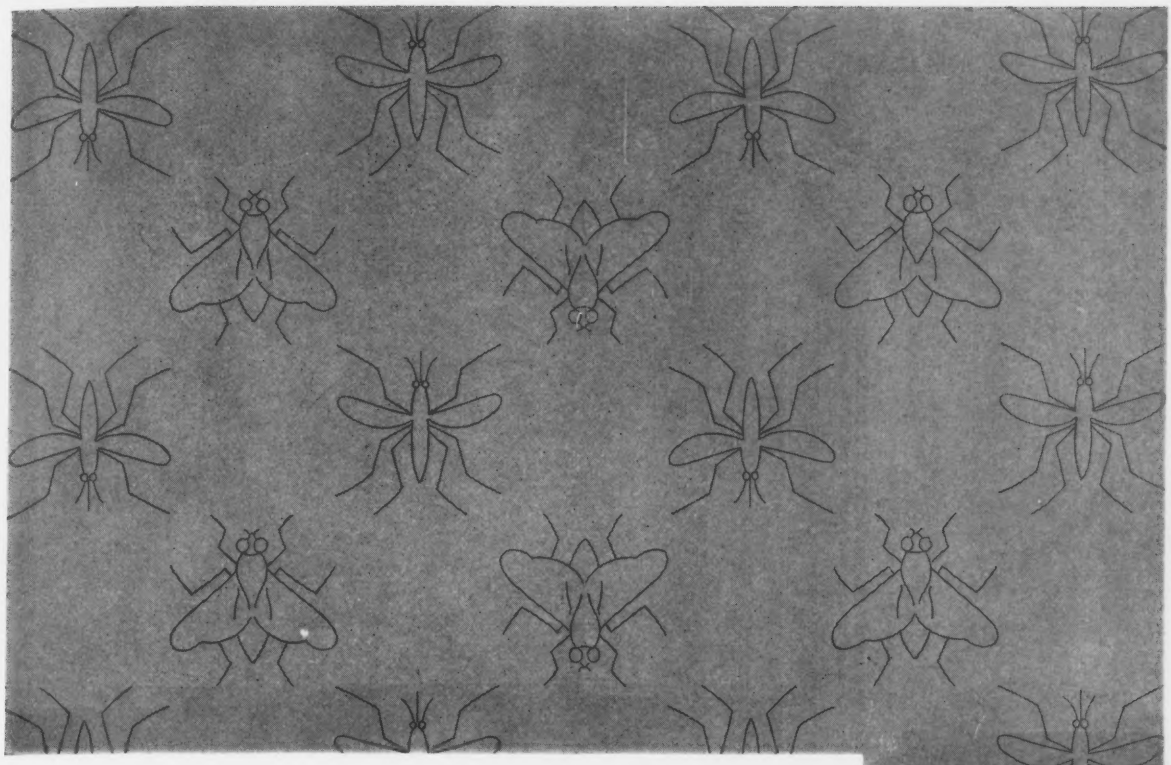
covers kerosene odor in sprays and insecticides with a sharp, clean, refreshing scent.



KERODOR NO. 1

neutralizes the kerosene odor in insecticides inexpensively . . . effectively. Leaves pleasant odor.

ODRENE

for use alone or in combination in sprays, polishes. A powerful, low-priced oil.

LAVENE

is especially good as a deodorant in polishes. Also effectively deodorizes fly sprays.

LILAC SPRAY OIL B-3223-2

is especially blended to overcome the odor of kerosene in fly sprays.

NEW MOWN HAY OIL B-3470

is one of the most popular in fly sprays. Especially effective in killing kerosene odor.

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color and perfume "paradi" blocks, bath salts or moth balls in one operation . . . and do it better because of uniform penetration and more effective perfumes.

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DELAWANNA INC.

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BRANCHES: Philadelphia Los Angeles Atlanta Cincinnati Detroit Dallas Baltimore
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Spray Odors
Coloromes
They thoroughly perfume and color Deodorizing Blocks and Crystals in one single operation.
(Some of the outstanding numbers)
Oriental O. D.-Green ..... @ $1.75 lb.
Pine Needles-Amber ..... @ 1.75 lb.
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Formaromes
Aquaromes
(water-soluble perfume oils)
For theatre sprays and for liquid soaps and shampoos.
(will NOT cloud your soap)
Specify for what purpose you want to use them, and the proper samples will be sent to you.
Price range from $1.50 to $6.00 per lb.
We also manufacture a series of Aquaromes producing a milky solution and especially designed for Formaldehyde sprays.

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INCORPORATED

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100% KILL

IN so far as the industry proposes to devote its efforts to exterminating insects instead of each other, we will be glad to cooperate and we have some new products which we think will be a big help. (Don't misunderstand—we mean in exterminating the insects.)

R. J. PRENTISS & CO., Inc.

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You'll find this hard to believe but TRUE:

"The best insurance against super-taxes is super-business"

You'll look back on that statement some day, and wish you had put it into effect.

By super-business is meant

1. The best product
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2. The best merchandising
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   the best distribution
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On odors we can help you, as we've helped so many large and small manufacturers of insecticides.

It pays to deal with those who *know* odors.

We know them. We make them "from the ground up."

Let us discuss with you *any* problem in connection with perfuming or odor neutralizing.

van Ameringen-Haebler, Inc.

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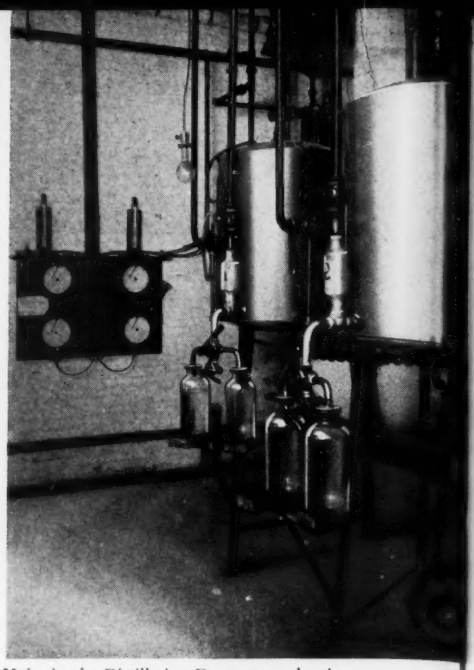
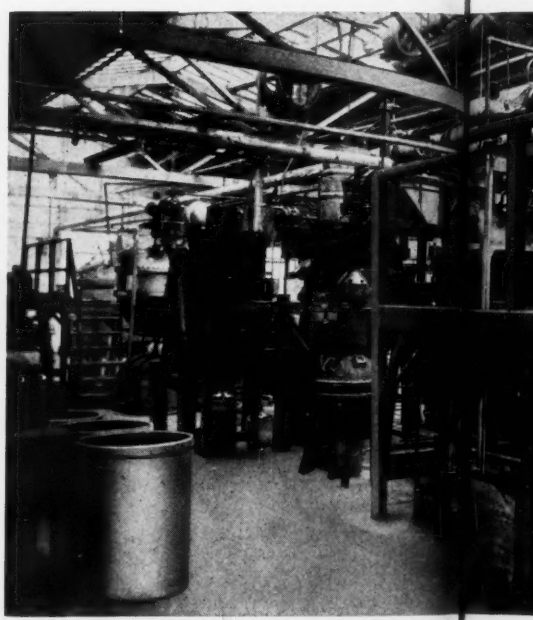
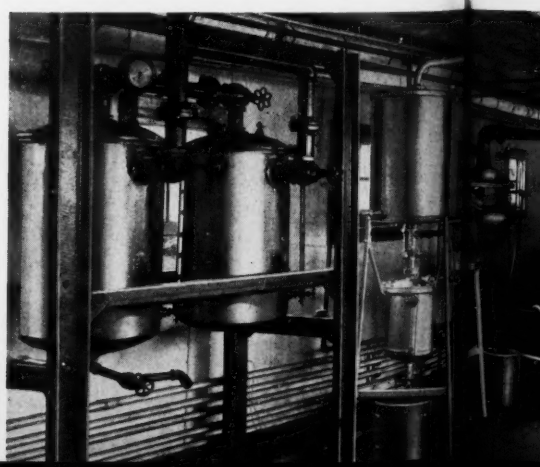
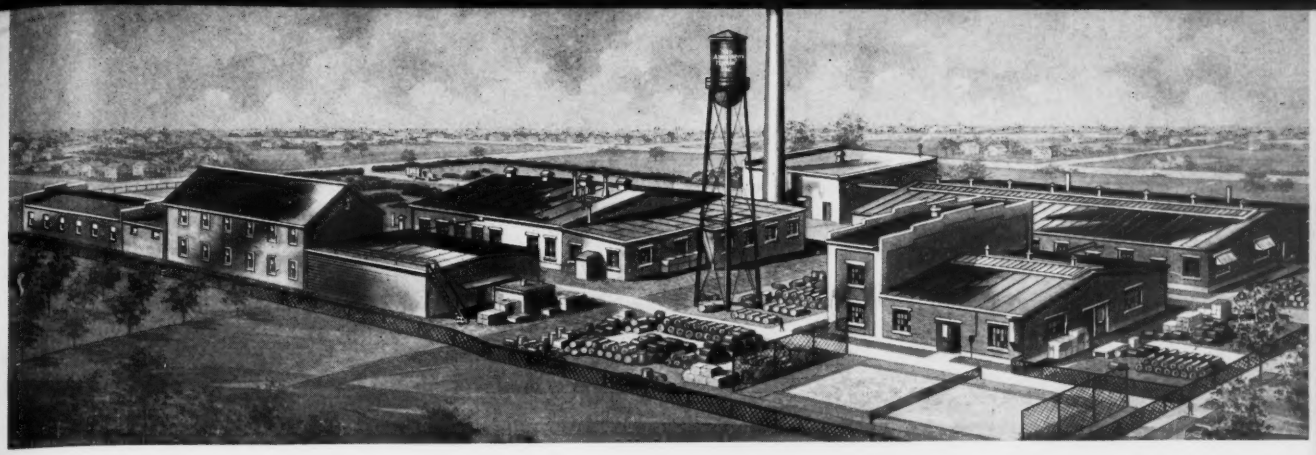


Units in the Distillation Department showing vacuum indicator and electric temperature control. Every piece of apparatus that uses heat is equipped with this "tell-tale" which makes a permanent written record 24 hours a day.



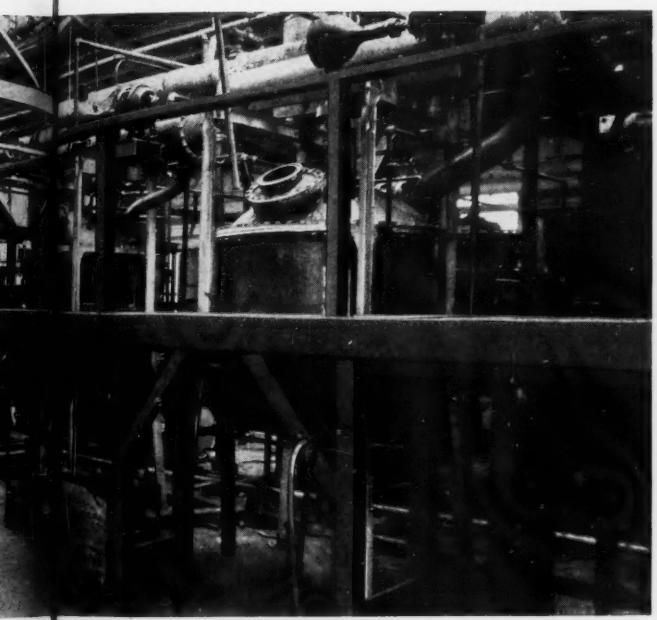
View of Reaction Department

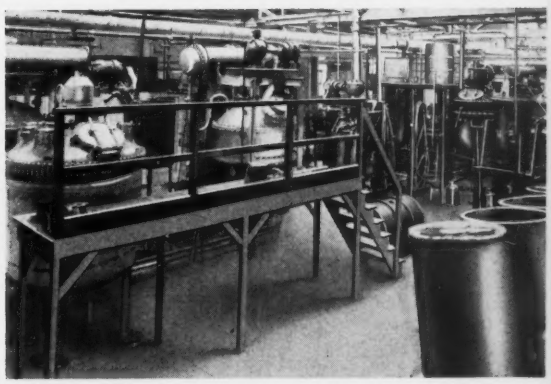




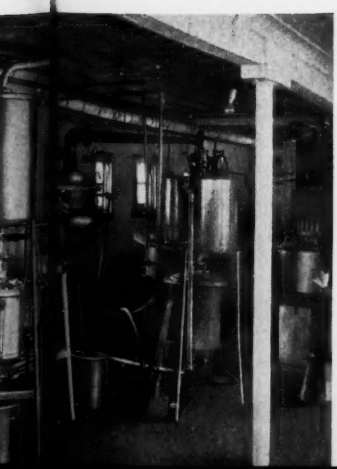
Views of the Factory of van Ameringen-Haebler, Inc. at Elizabeth, N. J.

Research and Analytical Laboratory



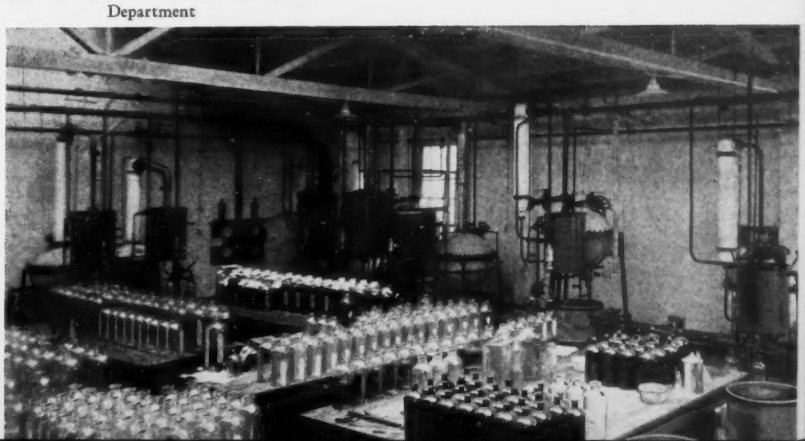


Section of Reaction Department



Section of True Fruit Flavor manufacturing department

View of one side of the Distillation Department



AN INSECTICIDE BUILT TO SPECIFICATIONS

★

To help your sales department:

1. This is the age of SPEED, and your customers demand it in their insecticide. No other material shows the rapidity of action characteristic of LETHANE 384.
2. The market for a LETHANE 384 spray is NOT LIMITED. No other material offers such a practical and convenient control for clothes moths, bedbugs and other pests which are just as common as flies. Most customers want something more than just a "fly spray."
3. LETHANE 384 sprays are ATTRACTIVE. No discoloring impurities mar their appearance. Cloudiness and sediments are unknown.
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LETHANE 384

The Synthetic Insecticide Base

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More than twenty of these **ANNUAL CONVENTIONS** have sped past • leaving us memories of good friends we like to see often • friends whose loyalty inspires and helps us to be helpful to their Industry.

Again we meet and greet you • with a renewed pledge of fidelity to your daily interests.

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One of America's Largest Canmakers

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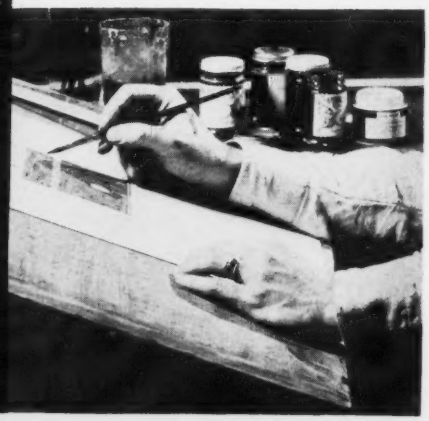
Deft PACKAGING art enlivens new brand names • and old ones too! It becomes an entering wedge, both to keynote and to quicken trade demand.

Staplest of the staple • your line becomes a SPECIALTY • new as the morning • speaking out from snappy closures in every corner of the store.

DRESS IT UP • for SALES!

● PLAIN CANS are our stock in trade, but we do design and decorate in a supreme expression of display value that wins notice • and SALES!

This talent will take YOUR LINE to market!



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OFFICIAL NILE BLUE
THE standardization of Sodium Fluoride Colored Official Nile Blue has effectively done away with hazard to the public. No one will mistake the blue tinted powder for a food ingredient. . . . Its potency as an exterminating agent maintains it as the dominant insecticide for the commercial and household destruction of insect pests. . . . This General Chemical Company product excels in free-flowing quality and fluffiness.
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The PERFECTED

PYREFUME SUPER 20

CONTAINS 2 GRAMS PYRETHRINS PER 100 C.C.

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CONTAINS 3 GRAMS PYRETHRINS PER 100 C.C.

by the SEIL modification of the world-accepted TATTERSFIELD test

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THESE products are not only physiologically tested in our PEET-GRADY chamber to confirm the killing power, but are also stabilized against inherent deterioration by the unique PENICK method.

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In addition to being manufacturers of Pyrefume, we are the largest botanical drug firm in the world. Our vast physical resources and modern laboratories help us keep abreast of latest developments in all phases of the industry, and as a result, Penick products are universally accepted the world over as products of unquestioned quality.

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DERRIS ROOT, CUBE ROOT and ROTENONE, which are now widely used —and also RED SQUILLS, Nature's destructive agent for rats.

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Specialists in doing one thing well

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For over a quarter century manufacturers of

TESTED and CERTIFIED COAL TAR and PINE OIL

DISINFECTANTS

for the wholesale trade

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SANITARY PRODUCTS

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

The Editorial View

STANDARD methods of analysis, as well as standard specifications, are essential if there is to be any agreement upon the basis of which any chemical product is sold. How does the buyer know where he stands if various and sundry products meet his specifications, but each according to a different method of analysis? Today, there is disagreement on the methods of analysis for pine disinfectant, coal-tar disinfectant, and other sanitary products, as well as liquid soaps. This disagreement gives the chiseler just another opening for chiselling. With this in mind, it has been suggested by a well-known manufacturer that standard methods of analysis be determined through a comparison of methods now in use, and that such methods be adopted and publicized as standard for the protection of the buyer and the honest manufacturer. We seek the views of the industry on this subject,—to be discussed more at length later.

—♦—

THE twenty-second annual meeting of the National Association of Insecticide & Disinfectant Manufacturers is in session in New York. Perhaps it is not an auspicious time to sound a discordant note, but be that as it may, we feel that it *is* time for somebody to speak up about the rotten conditions which continue to exist in the manufacture and marketing of disinfectants, insecticides, and allied sanitary products. In spite of the fine speeches and reports, pretty compliments, and back-slapping which occur twice annually, the business has not gone ahead as it should. Conditions have not improved materially in the past twenty years. New and dirtier tricks have merely come to take the place of the old and dirty ones. The profits of the industry have not kept pace with the expansion in business. Plain crookedness still plays a part in too many transactions. Too many products are still just ordinary fakes, designed to sell at cheap prices and not to do anything else.

The efforts of the National Association really to clean out rotten conditions have been feeble indeed. Its membership as a whole has been willing to take what it could, but obviously unwilling to give. Its attitude has been altogether passive, until perchance somebody's own toes have been stepped upon,—and then the clarion call to do something has been raised to high heaven. But withal, speeches, reports, and resolutions have been mostly empty words. The conditions at which they have been aimed still exist, chiefly because talk, sincere or otherwise, will not remove them. The Association is going to have to turn from passivity to activity pretty soon merely to justify its own existence, if for no other reason.

—♦—

INTERESTING to manufacturers of disinfectants is the fact that industrial dermatitis, that is diseases of the skin caused by infections due to the work in which an employee is engaged, are now classified in New York State as coming under the Workmen's Compensation Act, and any worker so afflicted shall be entitled to full compensation under the law. New York is the thirty-second state in the country to take this stand. This should be an opportunity to sell more disinfectants. Now that skin diseases, especially oil dermatitis so common in machine shops and similar plants, have such a widespread legal standing, and have a direct effect on compensation insurance rates, aggressive selling of disinfectants should produce more business,—that is, if the sellers will hook up their sales arguments with the dermatitis and compensation features.

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Member Board

Some Interesting Facts

About the

National Association of Insecticide and Disinfectant Manufacturers

THE National Association of Insecticide & Disinfectant Manufacturers was founded in 1914, to protect the then small and unimportant disinfectant and agricultural insecticide industries against what was considered the high handed administration of the Insecticide Act of 1910 by the U. S. Department of Agriculture. It was incorporated on November 2, 1914, as the Insecticide Manufacturers Association. Frank Hemingway, then president of Frank Hemingway & Co. was its first president. The first meeting was held at the Hotel Astor, New York.

Within a year or two after its start, the disinfectant membership had grown materially and the name was changed to the Insecticide and Disinfectant Manufacturers Association. By 1922, practically all the agricultural insecticide members had dropped out and it was planned to drop the "Insecticide" part of the name. Beginning in 1923-24, however, the household insecticide industry began its rise, and with the addition to the membership of a number of manufacturers in this class, the change in name was never made.

The annual meeting of the Association in 1917 was held in Washington, D. C. All other annual meetings have been held in New York. One summer meeting, that of 1926, was held out of the United States,—at the Hotel Frontenac in Quebec, Canada. The current meeting is the first time the Association has ever met at the Waldorf-Astoria in New York. Last year, it met at the Hotel McAlpin, New York. For the past eight years, it has held its mid-year meeting (June) at the Edgewater Beach Hotel in Chicago.

The person to hold office in the Association the longest period of years was Harry W. Cole of Baird & McGuire, Inc. For fifteen consecutive years, he was an officer of the Association, serving as president and secretary.

The Association has had ten presidents since its founding, beginning with Frank Hemingway, and following with H. W. Cole, M. M. Marcuse, C. C. Baird, Fred A. Hoyt, H. W. Hamilton, Dr. Robert C. White, Evans E. A. Stone, Peter Dougan, and Charles P. McCormick.

During the past year, in February, the Association lost through death one of its prominent scientists, an active member of the Board of Governors, Dr. Charles H. Peet of the Rohm & Haas Company, of Philadelphia.

A dozen of the original member firms; who helped found the Association in 1914, are still members. The membership has grown from an original eighteen or twenty to well over a hundred active members.

Recent Legislation

A Review of Recent Legislation as it Applies to the Insecticide and Disinfectant Industries — A Report by the Secretary

JOHN H. WRIGHT

A DETAILED report of the routine activities of the Secretary's Office would be entirely out of order at this time. Its only purpose would be to consume valuable time much needed for more important topics. It seems sufficient to state that we have been increasingly busy as indicated by the fact that in 1934 there were issued 41 Secretary Bulletins and to date this year there have been 72. We hope these bulletins served a useful purpose. I would, however, at this time like to invite the members to give me the benefit of any constructive criticism that they may have as to the conduct of the Secretary's Office, particularly as to the value of the information sent to the members, and suggestions for extending its scope. I would greatly appreciate your very frank comments.

In legislative matters you know that the busiest season comes in the winter and spring. Since my last report in June most State Legislatures have not been in session while the Federal Congress adjourned late in August. As a result there have been comparatively few new legislative proposals to consider.

Federal Food and Drug legislation is of course of the utmost importance. As I told you in June, S-5, in the revised form which passed the Senate, was a bill which was not open to serious objection on the part of the majority of the members of the industries affected. During the summer, hearings were held on S-5 before a Subcommittee of the Committee on Interstate and Foreign Commerce of the House but no further action had been taken at the time of the adjournment of Congress. This bill will not lose its present status when Congress reconvenes in January. It will undoubtedly be reported by the Committee to the floor of the House either in its present form or with amendments. Personally, I believe that there is no question but that a Federal Food and Drug bill will become law during the coming session. While S-5 in its present form has been approved by the Legislative Committee and the Board of Governors of the Association, I would suggest that every member again consider it carefully and communicate with the Secretary's Office if they find any seriously objectionable features.

State Legislation has been comparatively inactive during the summer. I am glad to be able to tell you that the California Pure Food and Drug Bill mentioned in several of our bulletins and which passed the California Legislature in June has been vetoed by Governor Merriam. The vetoing of this bill is a shining example of the good which can be accomplished through cooperative efforts, in which this Association and its members played a very active part. My belief is that the deciding argument with the Governor in reaching his decision to veto was the chaos which would result if State laws should become effective which would be in conflict with each other or with the Federal requirements. The importance of uniformity between State and Federal laws is obvious to any one and is a matter which is becoming increasingly important.

In California again there is an excellent example of this. Last winter this State Legislature passed an amendment to their Economic Poisons Act. During the summer tentative regulations were issued by the State Department of Agriculture under this amendment relating directly to the products of the members of this Association. I have particularly in mind the notices sent out by the State Department relative to the labeling of household fly sprays. In effect these tentative rulings would require first that all fly sprays containing pyrethrum or rotenone must remove from their labels all reference to the non-poisonous or non-toxic qualities of product even when qualified with such phrases as "When used as directed" which, as you know, is permitted at present by the Federal government.

In addition it was proposed that all pyrethrum sprays should be labeled with a statement of the active and inert ingredients in which the percentage of pyrethrins should be declared as the active ingredient and all other materials as inert. Vigorous protests against this ruling were filed with the California Department both by your Association and by numerous manufacturers. It so happened that your Secretary was in California during the early part of October at which time he discussed this matter with Dr. Cox, Chief of the Chemical Division of the State Department of Agriculture. At that time Dr. Cox told me that no immediate steps would be taken to enforce the rulings, that they were giving careful consideration to all of the protests which had been made and that when definite requirements were finally established important revisions undoubtedly would be made. I have of course no authority to speak for Dr. Cox but I believe he is most anxious to prevent undue hardship to legitimate manufacturers and is willing to go a long way to prevent conflict with Federal requirements. At the time of writing this report, I am awaiting

an answer from Dr. Cox to a recent letter requesting him for more specific information as to the present status of this matter in his department. I hope this will be available at the time of the meeting.

In my report of December, 1934, I called attention to the so-called Dunkel Amendment to Section 1361 of the Drug-Pharmacy-Poison Law of New York, which passed the State Legislature in April of that year. On the face of it, this seemed to be comparatively innocuous, at least so far as the majority of our members were concerned. It set-up restrictions regarding the sale of proprietary medicines " . . . which are poisonous, deleterious and/or habit forming". In the enforcement of this Act, however, it seems it is of the utmost importance to many members. It has been ruled by the New York State Board that any product will be considered as poisonous *if the entire contents of the retail package when taken at one time* is capable of producing a poisonous or deleterious effect. I personally know of several concerns, including members of this Association, who have had certain of their products in the 10c size classified as non-poisonous while the 25c, or larger size, must be labeled poisonous and sold only in drug stores. Recent activities would indicate that the Board will rule pyrethrum powder a poison and attempt to restrict its sales to drug stores.

Personally, such a ruling seems facetious. If carried to a ridiculous extent, it would be perfectly logical to set-up a standard whereby a half-pound bag of sugar could be sold in a grocery store as non-poisonous while a 100-pound bag of sugar, which certainly if consumed at one time would be deleterious, could only be sold in a drug store! I cannot too strongly urge upon every manufacturer that he notify the Secretary's Office immediately of any action that is taken against any of his products in a way which he feels would be at all unfair or unreasonable.

IF you have read our legislative bulletins, you are familiar with the activities in practically all States aimed toward the restriction of sales of many types of products to drug stores. Your Secretary and your Legislative Committee have been very busy on such matters during the past year. In most of the States such legislation has been either failed of passage or has been amended in such a way as to remove at least the most serious objections. However, from reports coming to the Secretary's Office from several States there is an indication that activities already commenced or contemplated by the enforcing bodies are quite likely in the near future to have a direct effect upon many insecticides and disinfectants. Again I ask you to please inform the Secretary's Office immediately as to any action of this nature which may be taken against you.

With the State laws affecting your products which have been passed in recent months and which may be passed in the near future, and particularly in view of the fact that the majority of these laws permit a wide discretion on the part of the enforcement official in drawing up regulations, it is more than probable that serious difficulty will arise because of conflict in label requirements between the various States and the Federal Government. The California situation in regard to fly sprays is an excellent example. Another is the New York State Board of Pharmacy in regard to caustic poisons to the effect that the word "Poison" must appear in *red ink* while *black ink* is permissible under the Federal law. Chaos will develop if it should become necessary to have a separate label for each and every State. This is a matter of such importance, and potentially capable of doing so much damage, that I would suggest the appointment of a special committee in the Association, the function of which would be to study the problem in detail, take such action as might be desirable by this Association, and cooperate with other groups interested in the same problem.

ANOTHER situation of interest to many members has resulted from the desire of the Federal Government to increase to the greatest possible extent their revenue from taxes. Most of you are familiar with the fact that the Internal Revenue Act provides for a 10 per cent manufacturers sales tax on all cosmetics. Recently the Treasury Department has attempted to assess such a tax against several manufacturers of Hypochlorite Solutions in regard to which some recommendation for use was made that in their opinion could be classified as a toilet use. The Department has not made a definite and specific ruling as to the kind and type of directions which would result in such a toilet goods classification. The Secretary's Office has asked the Treasury for such a ruling and has been assured that the matter is receiving careful consideration and advice will be forthcoming in the near future. This information will go out to the membership as quickly as it is available.

The drawing up of specifications by the Purchasing Department of municipalities covering disinfectants and insecticides has been a matter that has received much attention during the year. However, I will leave a discussion of this matter to the afternoon program which I believe will prove to be very helpful.

Many of you may be interested in the proposed amendment to the New York City Sanitary Code which was covered by one of our bulletins last summer. This would have been extremely objectionable and would have compelled the registration of practically all disinfectants and many insecticides with the City Department of Health and the payment of a $25.00 registration fee for each brand. Fortunately, through the efforts of the different interested Associations this matter has been indefinitely postponed in order to provide time for a final decision to be reached in regard to Federal Food and Drug Legislation.

Manufacturers of sodium hypochlorite solutions will be interested in the new specifications for both strong

and dilute solutions in the forthcoming revision of the U. S. Pharmacopoeia. I am hopeful that they will be available for distribution at the meeting. If not, they will be sent to the membership in complete form as quickly as possible.

F.D.A. REPORTS FOR 1934-35

The annual report of the U. S. Food and Drug Administration for the fiscal year 1934-35 has recently been issued. It details that 1,431 samples of insecticides, fungicides, and disinfectants of domestic manufacture were analyzed during the year, and in addition, 348 samples were collected from consignments of insecticides and fungicides offered for importation. In the domestic samples the following were included: 153 sprays for house flies and for the protection of animals against flies, 118 preparations for the control of clothes moths, 74 preparations for other household insects, 198 disinfectants, germicides and bactericides, and 82 sodium hypochlorite disinfectants and related products. The report states there is much misunderstanding by the average householder as to how an insecticide should be used, it being a common belief that the mere odor of a fly spray or moth preparation will kill or repel insects. Many of the products on the market have borne grossly misleading claims on their labels, as for example, fly sprays recommended to be used outdoors or moth preparations to be used against moths in an open closet or room. This has resulted in great loss to the user in money, it is reported, and lack of protection from damage. During the year 192 of these preparations have been tested, and fifty-two cases have been transmitted to the solicitor for criminal or seizure action.

United States exports of chemicals and allied products during October reached the highest value recorded for several years, according to C. C. Concannon, Chief of the Commerce Department's Chemical Division. Almost every major item in the list shared in the gain, he stated, with notable increases being made in shipments of naval stores and coal-tar products. The total value of chemical exports aggregated $13,570,000 in October, compared with $12,030,000 during the preceding month, and $10,301,000 for October last year, statistics show.

Lambert Company, for quarter ended Sept. 30, reports a consolidated net profit of $493,133 after charges and taxes, equal to 66c a share on 746,371 shares of capital stock, compared with $606,581 or 81c a share in the corresponding period last year. The net profit for the first nine months of this year was $1,313,548 or $1.76 a share, against $1,734,332, or $2.32 a share in the corresponding period in 1934.

Nu-Way Exterminating Co., formerly of 1035 Bergen St., Newark, is now located at 148 Chancellor Ave., Newark, N. J.

ADVOCATES PYRETHRUM SUBSIDY FOR U. S.

A proposed subsidy on American produced pyrethrum is an important feature of the new farm aid plan which has been drawn up by Wheeler McMillen, editor of the *Country Home*, and which is currently being submitted to 1,500,000 farmers for criticism and discussion. Instead of paying farmers for not producing such products as corn, cotton, wheat, etc., Mr. McMillen proposes to pay them for producing commodities which United States now imports. He points out that substantial quantities of pyrethrum available at a moderate price for use in agricultural insecticides to replace arsenical sprays would be of great national benefit. With payment of a government subsidy on pyrethrum, its domestic growth could be increased and United States could be made independent of foreign sources.

APPOINT CALIFORNIA PEST CONTROL BOARD

Exterminators and fumigators in California are currently being placed under the control of the new Structural Pest Control Board authorized in Assembly Bill 2382 approved last summer by the Governor. The act establishes the industry on a license basis, with power given to the board to award and revoke licenses. M. G. Jorgenson, Jorgenson & Co., Los Angeles, is president of the board, and two other members of the industry, Wilbur F. Smith, of Alderman Co., Pasadena, and Charles Menard, Rose Rat Exterminator Co., San Francisco, are also included on the board. Other members are David H. Merrill, who is secretary-manager of the Pacific Coast Building Officials Conference, Glen V. Slater, assistant state registrar of contractors, and Walter Trepte, president of the General Contractors Association. Applications for licenses are currently being filed and some 200 applications have already been received. A fee of $10 is assessed and applicants are required to take both an oral and written examination. Among the questions on the application is one asking the name of the concern's public liability insurance company, and another asking the name of the applicant's workmen's compensation insurance company.

A number of brands of liquid insecticide are sold in Turkey, including at least four foreign brands and one Turkish. The latter, called "Fayda", cheaper than the others, finds a certain popularity. No figures are available to show imports of insecticides into Turkey, but it is believed that American manufacturers supply the largest proportion, followed by the British product "Shell-Tox".

McKesson & Robbins, Inc., report net sales of $12,207,098 for October, 1935 as compared with $11,236,658 for October, 1934, an increase of $970,439, or over 8½ per cent. Sales for the first ten months of 1935 aggregated $107,431,984 as compared with $102,297,222 for the corresponding period of 1934, an increase of $5,134,762, or 5 per cent.

BREUER'S TORNADO QUALITY SPRAYERS SELL MORE INSECTICIDE

Breuer's Tornado Electric Sprayers may cost a little more but in the long run they are by far the lowest in price because they perform with greater efficiency and last for years. If the razor is no good you can't sell the blades. So it is with sprayers. Without Tornado Sprayers you can't get repeat orders or increased business.

Perfect atomization — years of trouble free service—Underwriters approval—safety, approved materials—all mean complete customer satisfaction.

Start 1936—build better business—by supplying your customers with the best sprayers.

MOST COMPLETE LINE OF ELECTRIC SPRAYERS TO MEET EVERY SPRAYING PROBLEM

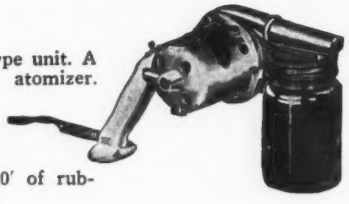
The New Tornado Model 36 Automatic Time Switch—Volume Air Control One Gallon Capacity, 1-3 H.P. G. E. Universal Motor

⅓ H.P. G.E. MOTOR
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
COMPRESSOR TYPE
1 GALLON CONTAINER

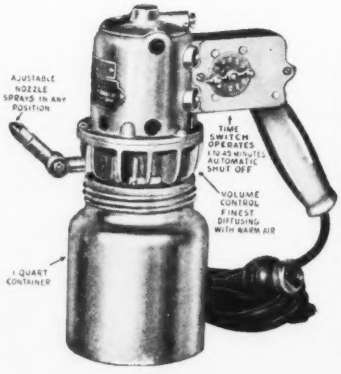
Here is the finest sprayer ever built. Similar to the now widely used Tornado Model 54 and retaining the automatic time switch, volume air control and adjustable nozzle features, the new Model 36 will spray a big volume of insecticide great distances in finest gas formation.

The patented principle of heating and compressing material does the trick. Just the sprayer you need for covering large distances and penetrating with the finest gas every possible source of insect existence.

Get the facts on this sprayer before buying!

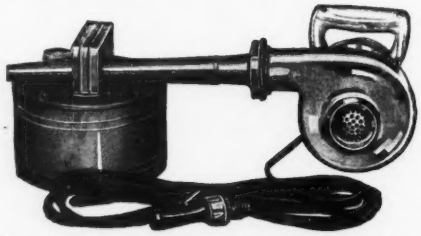


Model 50 Fan Type unit. A fine insecticide atomizer. Sprays distance of 8′ to 10′. ⅛ H.P. G.E. Universal Motor, 1 pint glass jar. 20′ of rubber covered cable.


ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER

MODEL 54—1 QT. CAPACITY

It features an automatic time switch set at any point from 1 to 45 minutes — sprays desired amount without any attention whatever — automatically shuts off. Can also be used for hand spraying. Adjustable nozzle can be set for spraying in any position. Also exclusive volume control adjustment permits spraying one ounce every two to four minutes with either fine or heavy spray. MODEL 53 same as Model 54 except does not have automatic time switch.



Model 6 Fan Type unit. Will break insecticide into a very fine mist. Sprays 18′ to 20′. 1/3 H.P. G.E. Universal Motor. Norma Ball Bearings, 1 gallon metal container. This model is for larger institutions, warehouses, industrials, etc., and is also highly recommended for moth-proofing solutions. Write today for complete description and circulars.

BREUER ELECTRIC MFG. CO.

862 Blackhawk Street **Chicago, Ill.**

We do not sell insecticides. Our business is manufacturing sprayers.

Patented in U.S.A. and Foreign Countries

Effects of Sunlight on Fly Sprays

A Study of Sunlight Effects on Odorless and Regular Pyrethrum Liquid Insecticides

By DAVID G. HOYER
John Powell & Company

CONSIDERABLE attention has been directed towards the stability of the active principles[2] of pyrethrum under various conditions of exposure. The scope of this work has been confined principally to stability in the whole pyrethrum flower and in the material ground to various degrees of fineness. Since little is known about the stability in petroleum[1] of the active principles of pyrethrum, this research has undertaken a practical study of the effect of sunlight on pyrethrum fly-sprays. The effect of sunlight was selected for investigation because the work already done on stability indicated that light was one of the primary causes for the toxic deterioration of pyrethrum flowers and insect powder. After various periods of exposure to sunlight and daylight the toxicity of the experimental sprays was determined chemically by the Seil[4] method and biologically by the standard Peet-Grady[5] test.

The nature of the chemical change which the pyrethrins undergo on exposure to sunlight is problematical, as the following review of the work already done will show. Wheeler[6] has found that pyrethrum dusts lose strength on exposure to sunlight through photo-chemical oxidation of the pyrethrins. After having exposed pyrethrum dusts containing a definite amount of pyrethrin I to sunlight, he discovered that the ratio of deterioration was approximately proportional to the pyrethrin concentration during the first eight hours of exposure. For longer periods of exposure, he found that the rate of photo-chemical decomposition fell off, and even after 45 hours of exposure an appreciable amount of pyrethrin I was left.

Although he did not mention by what chemical method the pyrethrin content was determined, he stated that the pyrethrin I content gives an approximate estimate of the toxicity of the deteriorated powder. Tattersfield and Martin[7] are in accord with Wheeler but emphasize the fact that a chemical determination of pyrethrin I does not give the absolute extent of loss of activity of pyrethrinized dusts on exposure to light, since a small residual value remains after exposure with which the biologically determined insecticidal activity is not in strict correlation. After an initial lag, the loss of activity of flowers and dusts exposed in air to sunlight is rapid and then decreases; the chemical change taking place was hastened by light through "some process of activation." Tattersfield[8] enlarged on the idea of activation by light and observed that samples exposed to light in an atmosphere of carbondioxide, nitrogen, or *in vacuo* lose little of their toxicity under the same conditions of illumination while samples exposed in oxygen rapidly lose their activity.

Pyrethrum spread in thin layers, Hartzell and Wilcoxon[9] report, when exposed to the light of a mercury vapor arc (ultra violet) deteriorated less than when exposed to direct sunlight. Gnadinger and Corl[10] exposed a purified solution of pyrethrin I and pyrethrin II to air and sunlight for three days and found a 97.1 per cent loss of pyrethrins. A similar sample exposed to nitrogen and sunlight for 12 days deteriorated only 4.2 per cent. Gnadinger[11] subjected pyrethrum fly-sprays to ordinary sunlight for 13 months out of doors where the temperature varied from —29 to 43° C. The samples were stored in flint, amber and blue glass bottles. The sample stored in flint glass showed a loss in toxicity of 50 per cent while the sample stored in the amber bottle showed no loss at all. The sample stored in the blue glass underwent a toxicity loss of 90 per cent.

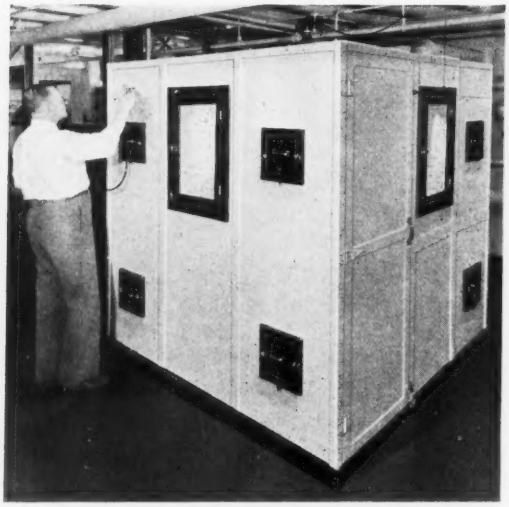
Working with separate solutions of pyrethrin I and pyrethrin II, Tattersfield and Martin[7] found that the pyrethrin loss over a large part of the exposure period corresponded fairly closely in each instance with an unimolecular reaction and that the rate of loss of pyrethrin II was slower than that of pyrethrin I. In their original work, Staudinger and Ruzicka[3] found that the pyrethrins in a petroleum ether solution are not appreciably affected by potassium permanganate. Tattersfield[12] found that the ferricyanide reduction figures indicated a lower oxygen absorption value left in the extracts after exposure. The reduction figures so obtained indicated generally a greater toxicity than was actually found. The failure of the chemical examination to determine accurately the extent of decomposition suggests the theory that hydrolysis of the esters had taken place on exposure to sunlight in the presence of water vapor. Hartzell and Wilcoxon[13] as well as Gnadinger and Corl[10] found that decomposition of the pyrethrins by air and sunlight was accompanied by the formation of material insoluble in petroleum ether.

1. The petroleum vehicles for the fly-sprays under investigation were of two types: (a) Samples Nos. 1, 2, and 3 each contained a different commercial brand of an especially treated petroleum distillate for use in "odorless" fly-sprays. (b) Sample No. 4 contained a domestic type of petroleum distillate ordinarily employed in fly-sprays.

2. The active principles of "Chrysanthemum cinerariaefolium" are known as pyrethrin I and pyrethrin II. Their chemical structure was determined in 1916 by Staudinger and Ruzicka (3) who found them to be esters of the cyclic ketonic alcohol pyrethrolone with chrysanthemum monocarboxylic acid and chrysanthemum dicarboxylic acid methyl ester respectively.

"Di-Bug" products are thoroughly tested biologically in our own Peet-Grady testing laboratory. A chemical assay is also made of the pyrethrin content of the flowers as well as of the finished products.

Control of KILLING POWER by Systematic Check Testing



''DI-BUG'' PYRETHRUM EXTRACTS and POWDER

You cannot make a silk purse out of a sow's ear. To manufacture a satisfactory insecticide, your raw material, whether pyrethrum flowers, powder or extract, is of prime importance. Constant vigilance and most thorough checking of pyrethrins and kill, as conducted in our laboratories, have established in the trade the certain confidence that DI-BUG pyrethrum products result in finished insecticides with a higher kill. That means steady repeat business for you.

SPRAYSENE — SCIENTIFIC INSECTICIDE BASE

FREE FROM KEROSENE ODOR

Many so-called deodorized kerosenes do not deserve this name, others do not run uniform or do not correspond to the specifications of the National Association of Insecticide and Disinfectant Manufacturers for the hydrocarbon distillate base test. SPRAYSENE is free from kerosene odor, runs uniform, corresponds to the above specifications and remains stable. Its high flash point of 175° F. makes SPRAYSENE safer. Its low end point insures complete evaporation.

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BUSH TERMINAL, BROOKLYN, N. Y.

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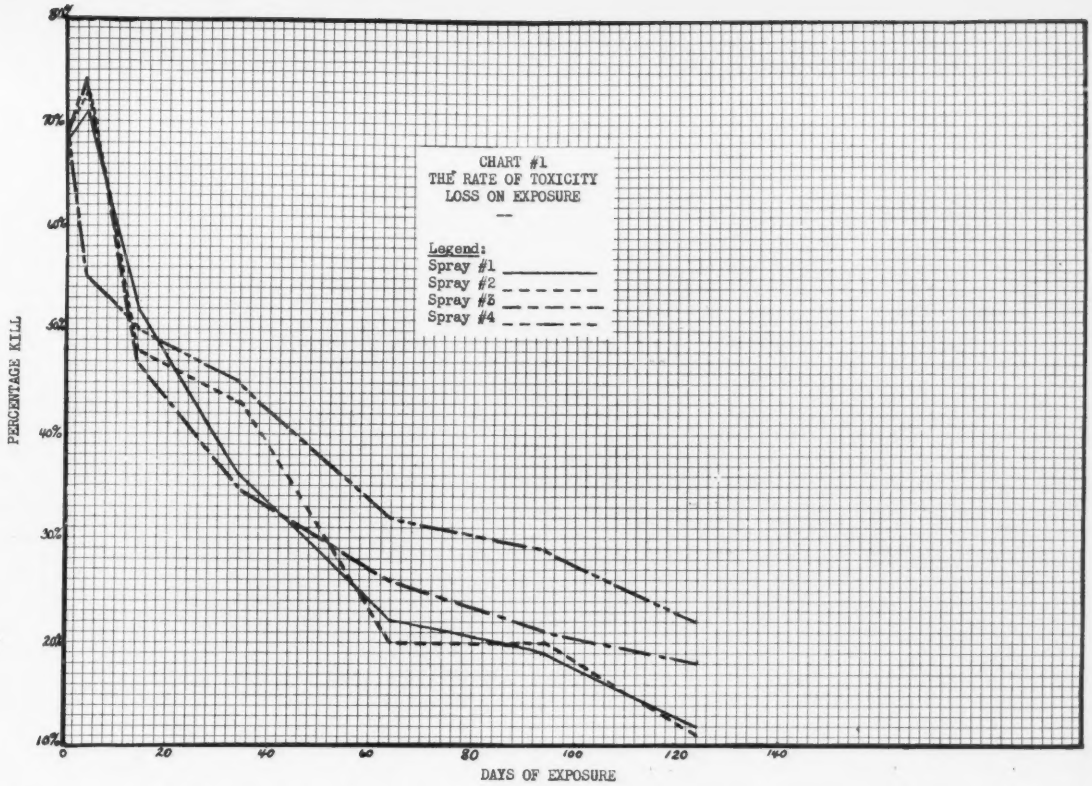


The researches of Ripert[14] offer theory and results of a different complexion from that of the aforementioned authors. When pure pyrethrin I is oxidized on exposure, he found that the material insoluble in petroleum ether was composed of levulic acid and that the pyrethrins themselves remained soluble. This is understandable. Ripert[15] states, since the pyrethrolone, when oxidized by alkaline permanganate, gives levulic and caproic acids. These acids then become oxidized and coat the pyrethrins. In this form the combined material was insoluble in petroleum ether. Losses in pyrethrin content on exposure to light are not due to decomposition of pyrethrins, Ripert concluded, but are caused by the unsaturated acids in the flowers. He further stated that the toxicity of pyrethrum flowers is actually more stable in storage than heretofore believed. From the above review of the work already done on the stability of the pyrethrins it is evident that there is general agreement in the results obtained, but not in corresponding explanitive theory.

Experimental

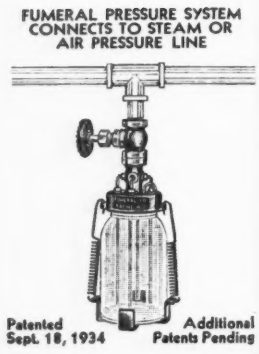
FOUR samples of finished fly-spray were prepared by diluting standardized pyrethrum concentrate. Samples Nos. 1, 2 and 3 were "odorless" type fly-sprays each having as an oil vehicle a different commercial brand of an especially treated petroleum used for this type of liquid insecticide. Sample No. 4, a "regular" type fly-spray, had as its vehicle a domestic type of petroleum ordinarily employed in fly-sprays. Each sample was placed in an air tight flint glass container whose walls were of medium thickness.

The four samples were standardized chemically and biologically. Approximately 1,000 laboratory-bred house flies were used for each Peet-Grady test.* The four samples were then placed in a position where they could receive the full effects of both the morning and afternoon sun. After three hours of exposure the "odorless" sprays began to assume a cloudy or hazy appearance although still retaining their characteristic amber color. The "regular" spray showed no effect by exposure at this point. The "odorless" sprays during the next three days continued to increase in haziness and to decrease in intensity of amber color. When the experimental samples had been exposed to daily sunlight for four days, the "odorless" sprays had lost practically all their amber color and had assumed a translucent appearance. When shaken, they began at once to change from a semi-amber translucency to a milk-like appearance. This transformation was complete at the end of five hours. Sample No. 4 still remained clear and amber. A sufficient amount of spray was removed from each flint bottle and was tested chemically and biologically for toxic value. (Series "B").

It will be observed from the figures of the accompanying chart that there was a perceptible increase in the biological kill of samples Nos. 1, 2 and 3 and that there was a substantial decrease in the kill of sample No. 4. The chemical tests show samples Nos. 1 and 2 decreasing in pyrethrin I content and increasing apparently in pyrethrin II content. Sample No. 3 showed an apparent increase in both pyrethrin I and II content. Sample No. 4, although decreasing in pyrethrin I, showed

"FUMERAL" INSTANT DIFFUSER

Does a Thorough Job.....INEXPENSIVE—EFFICIENT—ECONOMICAL



Instantly Destroys Insects, Deodorizes and Fumigates

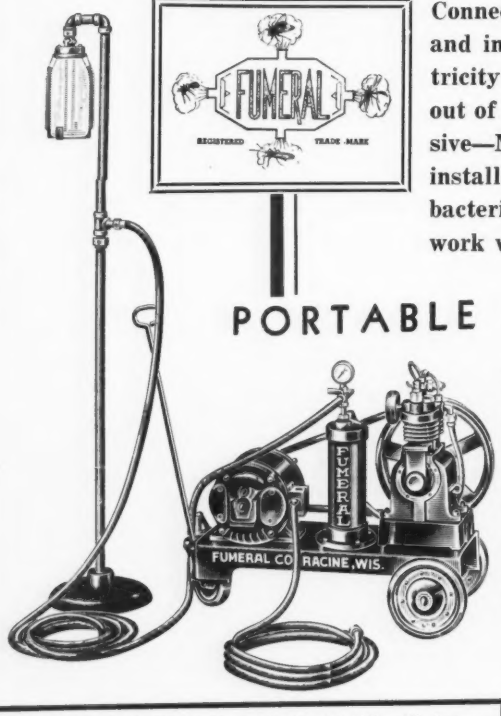
FOR use in Dairy Plants, Food and Meat Packing Plants, Cheese Factories, Flour and Feed Mills, Farms, Confectioneries, Ships, Paper Mills, Hotels, Schools, Theatres, Hospitals, Washrooms, Kitchens, Restaurants, Department and Ready to Wear Stores, etc.

The effectiveness of any good spray solution depends upon the efficiency of your spray equipment. Wet sprays are not efficient. It takes a minimum of 30 lbs. (steam or air pressure) to diffuse spray solutions. THE FUMERAL INSTANT DIFFUSER instantly charges the entire room. No insects, flies, cockroaches, ants, moths or germs have a chance to escape. Connects to any steam or air line. Turn on the valve and in 4 minutes the operation is completed. No electricity to fuss with. No moving parts. Nothing to get out of order. FUMERALS stay sold. Simple—Inexpensive—More Efficient and Most Economical. Anyone can install it. Various brands of insecticides, germicides, bactericides, deodorants, disinfectants and perfumes all work well in the FUMERAL INSTANT DIFFUSER.

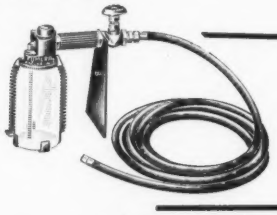
PORTABLE FUMERAL EQUIPMENT

Where steam or air pressure is not available we recommend our portable equipment specially designed to furnish a large volume of air at a constant high pressure to thoroughly diffuse and circulate into space the various brands of insecticides, deodorants, disinfectants, etc.

FUMERAL Portable Model PK is specially developed for exterminating and sanitation service. This compact unit has ample capacity for either large or small jobs, yet it can be operated from the ordinary lamp socket producing a pressure of 75 lbs. Any insecticide, deodorant, or disinfectant will attain its greatest efficiency and be more economical to use when thoroughly diffused and circulated with this modern labor-saving equipment. Write for detailed information.



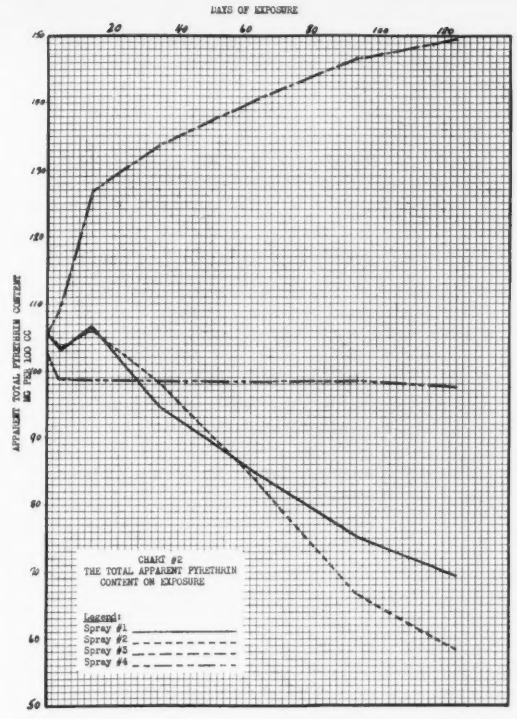
Twin cylinder FUMERAL Portable Model PK with large FUMERAL Pressure Diffuser Model 6 mounted on portable stand.



Large FUMERAL Pressure Diffuser Model 7. Convenient sections of hose up to 300 ft. may be used.

We also manufacture larger diffusing equipment mounted on standard trucks and driven by the truck engine for operating operating ten to twelve units at one time.

FUMERAL COMPANY RACINE, WISCONSIN



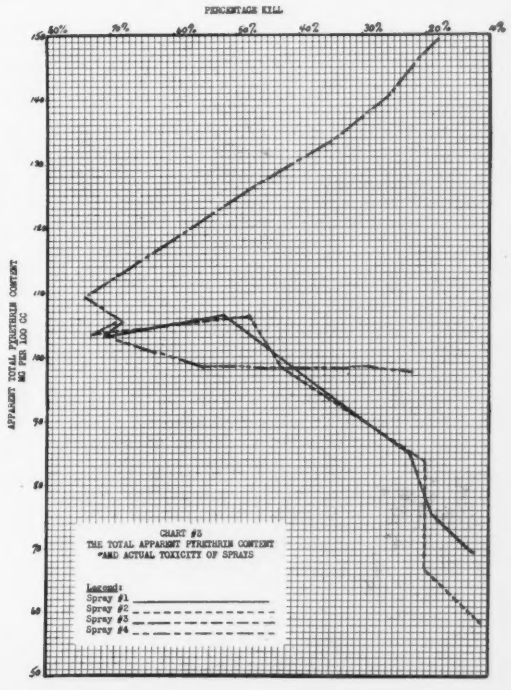
a very slight increase in pyrethrin II. These chemical tests were twice checked for verification.

These "apparent" increases in pyrethrin content,—with the lone exception of sample No. 3,—were confined to pyrethrin II. The nature of the chemical method employed in this work is such that the amounts of chrysanthemum monocarboxylic and dicarboxylic acid present are upon determination calculated by virtue of molecular ratio to the relative amounts of pyrethrins I and II. Any fatty acids present, unless removed beforehand, would show up as either pyrethrin I or II, depending on their volatility and solubility. Consequently, the apparent increase in pyrethrin II content was due to the formation or development of a fatty acid in the spray. The increase in the toxic effect of the "odorless" samples was actual, since ten different batches of 100 house flies reacted approximately the same when subjected to the sprays in the Peet-Grady chamber. The control spray, containing 100 mg. of pyrethrins per 100 cc., indicated that the flies were of normal resistance.

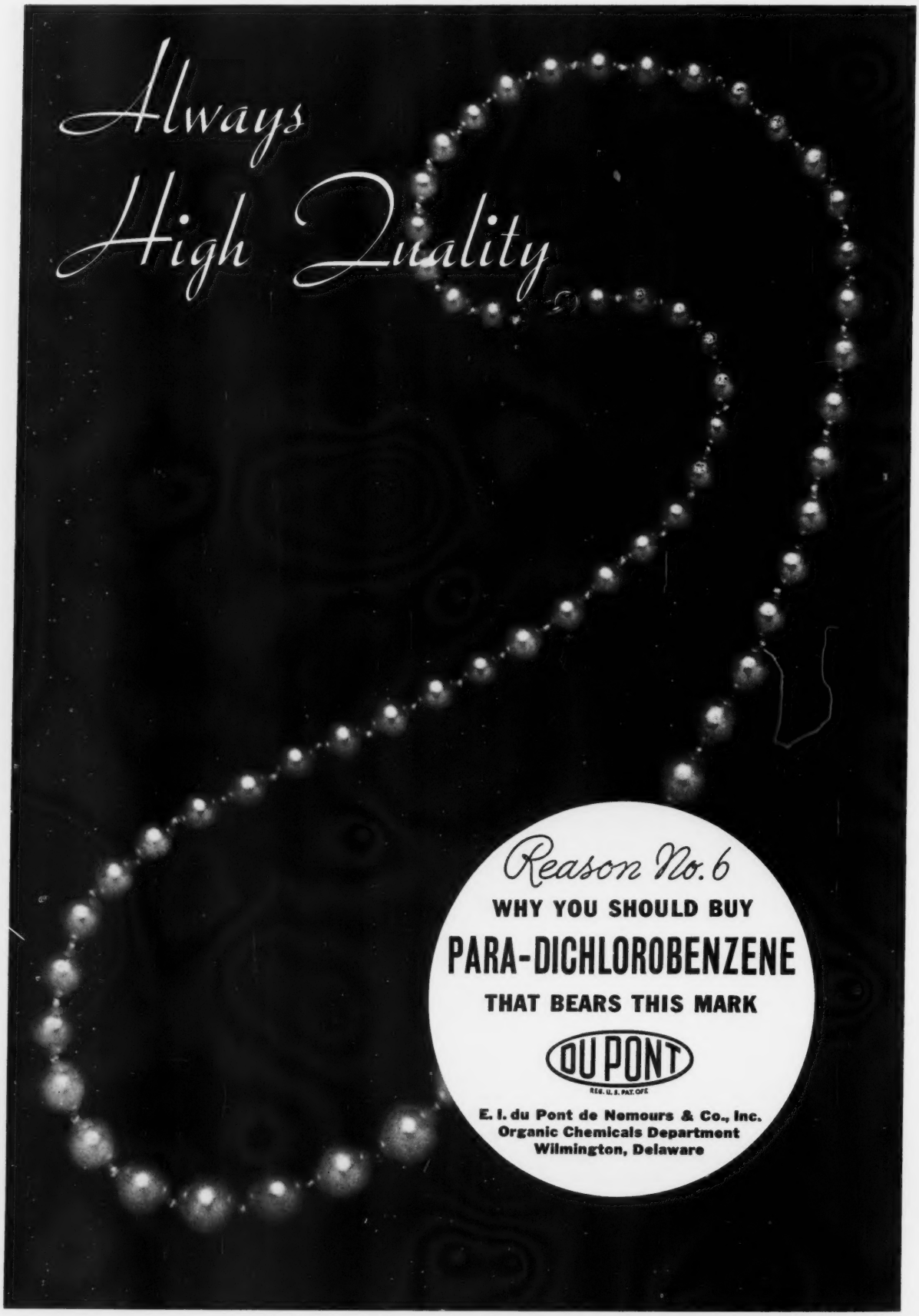
The sprays were exposed to the sunlight of the following ten days when they were again tested (series "C") chemically and biologically. Chemically, the pyrethrin content of the sprays continued to decrease or increase as in the preceding set (series "B") of examinations. The biological kill of all the samples dropped to a new low. It was evident at this stage that the amounts of pyrethrins I and II showing up upon analysis must be disregarded as an indication of the toxicity of the sprays. The apparent decrease in the amount of pyrethrin I was not great enough to be commensurate with the toxicity determined biologically. It was evident that a volatile acid was forming, which was being determined as chrysanthemum monocarboxylic acid and consequently in the final calculations showed up as pyrethrin I. In this series ("C") of examinations the total amount of acids appearing chemically as pyrethrin II in sprays Nos. 1 and 2 had reached a maximum. The acids forming in sprays Nos. 3 and 4 continued to increase, and this, of course, accounts for the "apparent" increase in the pyrethrin II content.

At the time when series ("C") examinations were conducted, the "odorless" type sprays still possessed a milky-opalesence. The "regular" spray was still clear, but had decreased noticeably in intensity of amber color. A white colored material, insoluble in petroleum ether, had begun to settle out of each spray. At the duration of an additional three weeks, and thereafter once monthly for the next three months, the four sprays were tested chemically and biologically. At the conclusion of these examinations (series "G") the sprays had been exposed to sunlight or daylight for four months.

Throughout the last three and one-half months of exposure (series "D"—"G") there was a decrease in the acidity of "odorless" sprays Nos. 1 and 2. This was shown by the chemical determination for pyrethrin content. The remaining "odorless" spray (No. 3) continued to increase in acidity, the amount of acid formed at the time of series "G" being sufficient to be easily detected in the oil by litmus paper. The "regular" spray (No. 4) continued to decrease in the amount of acidic substances showing up chemically as pyrethrin I and to increase in the amount of material being determined chemically as pyrethrin II. The biological kill decreased with each set of examinations.



* (The Peet-Grady tests were run in our laboratory by S. Zarkoski von Schmidt).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Wilmington, Delaware

Chemical and Biological Data

	Series	Pyrethrin I	Pyrethrin II	Total Pyrethrins Grams per 100 cc.	% Down 10 mins.	% Kill 24 hrs.	Date of examination
Sample No. 1	(a)	46.6	58.9	105.5	98	68	5- 9-35
	(b)	40.7	62.4	103.1	97	71	5-13-35
	(c)	38.6	68.1	106.7	98	52	5-23-35
	(d)	32.9	61.6	94.5	88	36	6-12-35
	(e)	27.3	57.5	84.8	85	22	7-12-35
	(f)	24.4	50.8	75.2	67	19	8-12-35
	(g)	23.2	46.2	69.4	43	12	9-11-35
Sample No. 2	(a)	46.6	58.9	105.5	97	69	5- 9-35
	(b)	42.7	60.6	103.3	96	73	5-13-35
	(c)	40.8	65.3	106.1	98	48	5-23-35
	(d)	34.0	64.9	98.9	88	43	6-12-35
	(e)	29.4	54.1	83.5	85	20	7-12-35
	(f)	25.4	41.5	66.9	60	20	8-12-35
	(g)	23.9	34.6	58.5	33	11	9-11-35
Sample No. 3	(a)	46.6	58.9	105.5	95	68	5- 9-35
	(b)	48.1	61.1	109.2	96	74	5-13-35
	(c)	56.2	70.5	126.7	98	47	5-23-35
	(d)	58.4	75.1	133.5	87	35	6-12-35
	(e)	59.1	81.7	140.8	54	26	7-12-35
	(f)	60.8	85.7	146.5	53	21	8-12-35
	(g)	61.1	88.3	149.4	54	18	9-11-35
Sample No. 4	(a)	44.2	58.4	102.6	99	69	5- 9-35
	(b)	40.3	58.6	98.9	97	55	5-13-35
	(c)	38.1	60.7	98.7	98	50	5-23-35
	(d)	36.4	61.7	98.1	98	45	6-12-35
	(e)	35.6	62.6	98.2	88	32	7-12-35
	(f)	34.9	63.5	98.4	79	29	8-12-35
	(g)	33.6	64.1	97.7	46	22	9-11-35

Control Sample Containing 100 MG. Pyrethrins Per 100 CC.

Date of Examination	% Down 10 mins.	% Kill 24 hours
5- 9-35	98	68
5-13-35	97	66
5-23-35	97	67
6-12-35	98	65
7-12-35	99	64
8-12-35	98	65
9-11-35	97	68

Summary

THE accompanying three charts give the graphic picture of the effect of sunlight and daylight on representative pyrethrum fly-sprays. Chart No. 1 shows the loss in the toxic effect of the sprays on exposure. All the sprays lost approximately 65 per cent of their toxic properties within the first two months of exposure, and lost only an additional 25 per cent during the last two months. During the first four days of exposure the "odorless" sprays were erratic and increased slightly in toxicity. There is no certain explanation of this phenomena, but the theory suggests itself that the light rays caused the formation of an unstable toxic substance within the especially treated oil vehicles of the "odorless" sprays. The "regular" spray dropped rapidly in toxicity.

Chart No. 2 compares the "apparent" pyrethrin content with the duration of exposure. Due to the development of an acidic substance within the sprays the pyrethrin content as determined chemically could not be used as an index of toxicity. It will be observed that after an initial increase in acidic content (which may be associated with the initial increase in toxicity) the "apparent" total pyrethrin content of sprays No. 1 and No. 2 falls rapidly off. Sample No. 3 increased throughout the entire 124 days of exposure in amount of acidic material present. After an initial drop in "apparent" pyrethrin content sample No. 4 appears to remain fairly constant thereafter. This consistency is explained by the fact that the loss in "apparent" pyrethrin I content was compensated for by the increase in "apparent" pyrethrin II content.

Chart No. 3 serves to illustrate that the "apparent" pyrethrin content, or the amount of acidic material present, is not commensurate with the actual toxicity of the sprays determined biologically on house flies. Although the curves representing sprays No. 1 and No. 2 show a general agreement in trend with the curves of their loss in toxicity, the false "pyrethrin" content prevents any accurate comparison.

The theories of Dr. Ripert relative to the development of fatty acids when the pyrethrolone is oxidized by alkaline permanganate have been mentioned previously. Other authors have stated that the loss in toxicity of pyrethrum on exposure is due to "photochemical" oxidation of the pyrethrins or to some other form of molecular reaction. In the instance of the work covered by this particular paper no attempt has been made to determine the nature of the chemical change taking place as the sprays lost toxicity on exposure. It has been found, however, that pyrethrum fly-sprays of the "odorless" and "regular" type, stored in sealed flint glass containers, lose practically all their toxic value on exposure to ordinary sunlight and daylight. This loss in toxicity is accompanied by the development of acidity within the sprays. Whether this acidity is due to the liberation of the unsaturated natural acids of pyrethrum, or to development in the oil vehicle by a photochemical action, or to a combination of both, is a problem for future study.

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American-made household insecticides were the first introduced into Syria, but of late French and Italian makes have been offering keen competition, which has led American exporters to reduce their prices considerably. Moreover, a few Syrian retailers are using concentrates which they mix with petroleum and sell at a very low price. All these factors have rendered the Syrian market less interesting to American exporters of finished insecticides.

Robert M. Chapin has been appointed chief of the biochemic division of the Bureau of Animal Industry of the Department of Agriculture. Mr. Chapin had served as acting chief since the death last July of Dr. Marion Dorset. He is a native of Massachusetts and a graduate of Amherst College.

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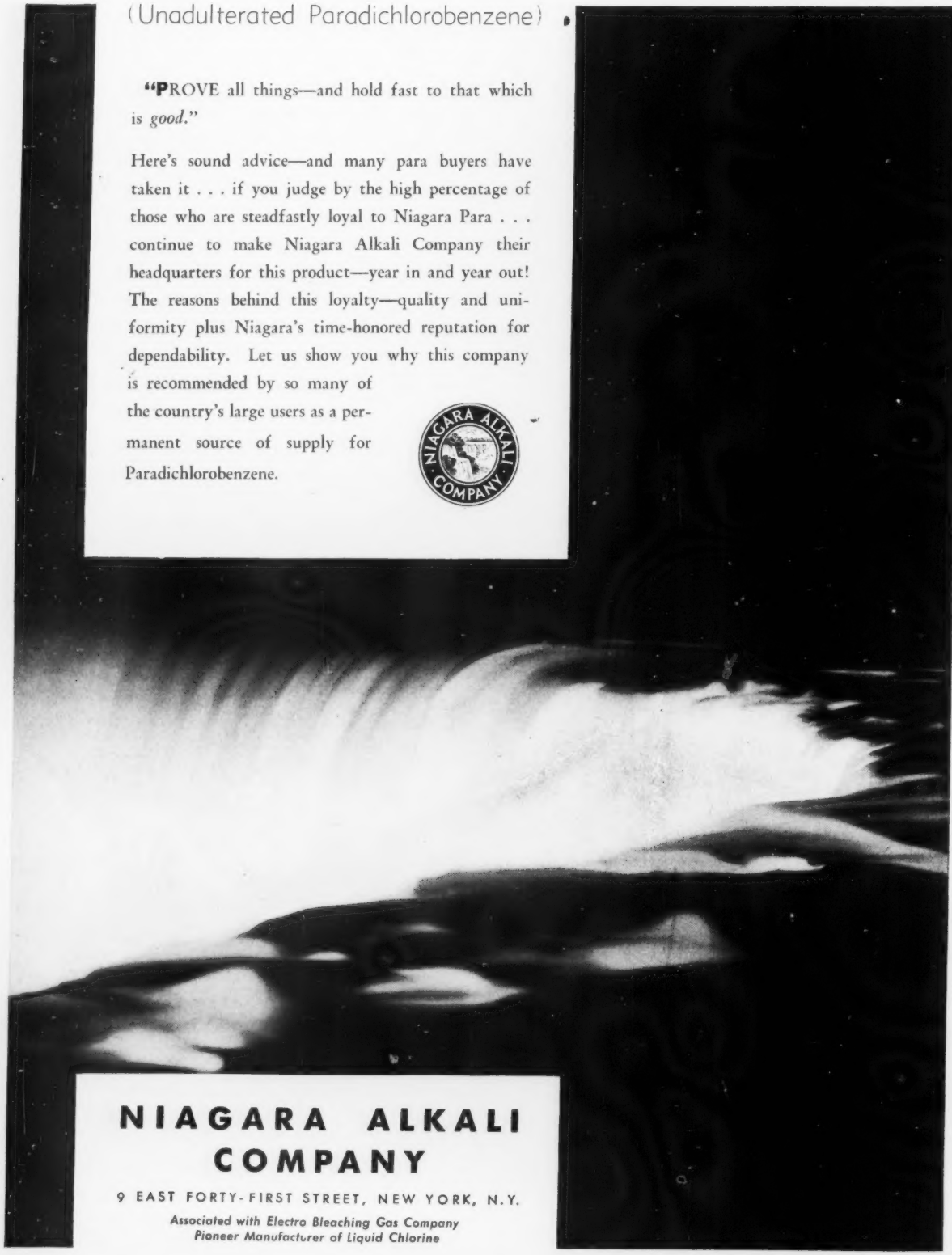

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Public Health Aspects of

INSECT AND RODENT CONTROL

By JOEL I. CONOLLY, M.S.*

Chief, Bureau Public Health Engineering, Chicago

WARFARE, both widespread and intensive, which never gets on the front page of the newspapers, is constantly going on. Headlines carry the story from day to day of the quarrel between Italy and Ethiopia, but little is said about a much more important war waged by mankind against insects and rodents. Occasionally, one hears or reads the prediction that eventually insects will kill off all mammals, including man, largely because of the tremendous reproductive powers of insects. It is, of course, entirely possible that many extinct species of animals were exterminated through the attacks of insects or by diseases carried by insects, and that a similar fate awaits the human race. On the other hand, the advances which have been made in controlling both insects and diseases during the past half century are an indication that the human race will continue to be able to devise adequate protection against insects. Although he will probably never conquer insects completely, man will doubtless be able, on the other hand, to prevent their exterminating him.

The warfare between man and insects assumes many different phases. It is prosecuted on a number of different fronts. For example, some insects, such as cornborers, certain weevils, chinch-bugs, gypsy and brown-tail moths, and some rodents, such as rats and mice, attack the food supply of the human population. Another battlefront is where the moths that eat holes in clothing, the carpet beetles, and the boll-weevils of the cotton field, threaten our supply of clothing and house furnishings. Even the timbers of our houses themselves are sometimes a battlefield in the war against insects, for our supplies of lumber are threatened by many kinds of insects which attack living trees, and, in addition, wooden portions of structures are invaded by termites and teredos in some instances. Doubtless you all recall the collapse of the roof of the library of the Vatican some years ago, due to destruction of roof beams by wood-eating insects or worms.

Far more important than all those aspects of the war, which might perhaps be regarded somewhat as skirmishes, is the main battle on the public health front, where the real menace to the human race exists. This is the fact we all must learn to recognize. In order to sell others any idea, you must first be sold yourself. Is it possible that the most important single reason for insect control is being largely neglected by members of the fumigating and exterminating industry in the selling of its services to the public? Should not this industry familiarize itself most thoroughly with the hazards to health which various insects present? Should you not keep abreast of all developments in the public health field which have any bearing upon the destruction of insects?

For example, it is generally known that certain seaports of the United States have been infected at times by bubonic plague, the devastating disease carried from country to country by rats and spread from rats to human beings by fleas. Yet, how many people in the general public, not actively engaged in public health work or in the exterminating industry, know that plague has already existed among ground squirrels in California for a generation and is even now spreading eastward toward the Middle West? How many men in the exterminating industry know that the United States Public Health Service has recently found plague-infected ground squirrels in Montana and that this dread disease has now crossed the Sierra mountain range, demonstrating beyond all possibility of doubt, that such mountains are ineffectual in confining a disease to any given locality?

The recent, rapid spread of this disease among rodents over distances of hundreds of miles causes it to appear that it may be only a question of time when bubonic plague will infect the rat population in our great metropolitan centers of the Middle West, and possibly eventually even the eastern seaboard, unless widespread and thorough preventive measures are taken. Matters of this kind should be kept constantly before the members of this industry and utilized insofar as possible in the promotion of your business, which is doing so much to protect the public against the diseases which are spread by rodents and insects. You are allies of the public health authorities, and your publicity should stress the health aspects of your business. Why not study and convince yourselves of its value to public health and then go out and sell the idea to all your customers?

In order to carry on a successful war, whether it be against human foes, insects, ignorance or superstition, one must have suitable ammunition. Public health authorities were powerless to prevent epidemics of diseases as long as they had no weapons or ammunition with

* Address before National Assn. of Exterminators and Fumigators, Detroit, October, 1935.

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which to fight. Fortunately this condition no longer exists and, as a result, many diseases are now being controlled.

In the old days (and even among some backward races today), epidemics were regarded as visitations resulting from the wrath of angry gods or demons. One finds an example of this in the 5th and 6th chapters of the first book of Samuel in the Old Testament.[1] This Bible passage tells how after the Philistines defeated the Israelites and seized the Ark of the Covenant as spoils of war, a pestilence broke out among the Philistines which they attributed to the wrath of the God of the Israelites, for their sacrilege in seizing the Ark. In order to be spared from the epidemic, the Philistines returned the Ark of the Covenant to the Israelites, together with offerings of golden images of mice and emerods. These offerings seem hard to understand until one looks up in the dictionary the meaning of the word "emerod," which is defined as an obsolete term for a tumor, boil or plague spot, being an archaic form of our present-day word, "hemorrhoid." Smith's American translation of the Old Testament into modern speech says "plague-boils" instead of emerods. We may conclude that the disease was bubonic plague, which causes swellings called buboes in the groin, since the Bible says the emerods occurred in their private parts. The fact that they made offerings of golden mice indicates that even in that ancient time there was at least some association in the minds of the Philistines between this rat-borne disease and rodents. Probably they had noticed that many deaths among rats preceded the outbreak of disease among the human beings.

Sacrifices and gifts, to appease the wrath of the gods or demons, appearing to have no effect upon epidemics, intelligent people next turned their attention to observing the manner in which epidemics occurred, and there developed the theory of some mysterious miasma in the air, which affected populations simultaneously throughout an area covered by an epidemic. This idea was current in medical circles until the birth of modern bacteriology, which made it possible for us to learn definitely the causative agents of some diseases. Neither the miasmic theory nor the theory of an angry god permitted effective measures to be employed in the control of epidemics of disease. Today, we have the ammunition we need to do at least a partial job, in the shape of real scientific facts on the spread of some diseases. The results are shown in cleaning out yellow fever in Havana and Panama, and in many other similar instances.

LET me pause to point out that during these centuries, before the birth of modern sanitary engineering, diseases repeatedly decimated the human race. I would like to invite your attention to just a few lines about bubonic plague during the Middle Ages, which appeared in a text-book on public hygiene.[2]

"The black death of the fourteenth century destroyed a large portion of the human race. Literally, it was a convulsion of the human race, unequalled in violence and extent. It speaks of incredible disasters, of despair and unbridled demoniacal passions. It shows us the abyss of general licentiousness, in consequence of a universal pestilence, which extended from China to Iceland and Greenland. Thirteen million persons are said to have died in China alone. India was nearly depopulated, aside from China twenty-four million souls perished in the Orient. In Venice, one hundred thousand perished and half that number in Paris. Hundreds of thousands died in England. Italy lost half its inhabitants, Spain suffered horribly, and all told, it is estimated that at least one-fourth of all the people of Europe perished.

"The passions of men seized upon religious pretext in order to commit wretched and sordid crimes and the church itself resorted to the most unbridled persecution of Jews and ceremonies speaking volumes of the ignorance of the age. On the other hand, the truly religious in and out of the church were aroused to the sense of the abuses of the age that finally led to much of true reform.

"The medical authorities of the time regarded the bubonic plague as due to a grand conjunction of the three superior planets, Mars, Jupiter, and Saturn, on the 24th of March, 1345. A few of the more rational ones attributed the disease to causes other than astral and believed that the habits of the people and impure air had much to do with the spread of the disease."

One need not go back to the Fourteenth Century to find instances of this kind. The story of the plague in London in 1655,[3] by Daniel Defoe, better known as the author of "Robinson Crusoe," is a story as full of interest as a "best seller." You should read it. The eye-witness accounts of yellow fever in Philadelphia shortly after the Revolutionary War indicate that people died more rapidly than they could be buried and that dead bodies were frequently found lying in the streets. A graphic account of bubonic plague is given by Alexander Kinglake,[3] in the story of his travels through the Holy Land and Egypt at a time when plague was raging in Cairo, about a century ago. I need not recall to your minds the terrible havoc caused by typhus fever during the World War, resulting in many thousands of deaths among the armies in eastern Europe and wiping out additional large numbers of the civilian populations in the Balkans and Turkey. It is estimated that in the winter of 1915-1916, not less than 150,000 civilians died of typhus fever in little Serbia alone. All of these diseases I have just mentioned—bubonic plague, yellow fever, and typhus,—are spread by insects such as fleas, mosquitoes and lice, all of which come within the range of interest of the exterminating and fumigating industry.

Even granting that promotion of comfort, as well as saving in money, is sufficient warrant for your business, still the public health argument remains the most powerful and probably the least used in the development of your activities and the securing of customers.

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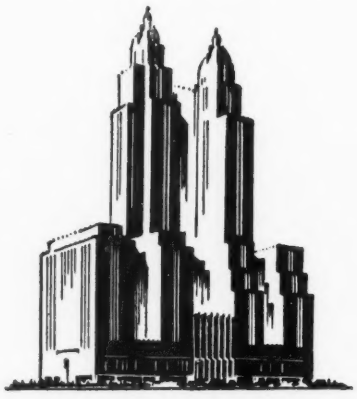

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PERHAPS, you have frequently heard the saying that rats have destroyed more human beings than all the wars of history. I believe that this is absolutely true. Even the tremendous losses in life which occurred in the Great World War, staggering as they are, do not begin to approach the losses that have repeatedly resulted from epidemics, such as that of bubonic plague which occurred from 1365 to 1385. In an article on Tropical Medicine,[5] the statement is made that disease has been a big factor in preventing economic development of the tropics, and that the greater number of tropical diseases are insect-borne.

The control of insects and rodents, which carry disease, should accomplish more for the future protection of mankind than all the peace conferences and arms limitation pacts, about which we hear so much over the radio and read so much in the daily press, with all due respect to the praiseworthy efforts of the earnest men who labor for them.

Another factor which we should bear constantly in mind is the research work for new discoveries constantly going on, and by its results emphasizing the importance of insects to public health. We ought to read public health journals regularly to keep abreast of the times in this respect. For example, Rocky Mountain spotted fever is a disease which has not been known very long, relatively speaking, and which is spread largely by ticks. We have a duty to enlighten the public in regard to such diseases.

It is entirely possible that other diseases may be found here or brought to our shores from foreign countries, in the spread of which insects or rodents, or both, play an important part. It is gratifying to know that at the present time certain insect-borne diseases are not present in the United States and that the Government is taking stringent precautions through foreign and insular quarantine to keep them out.[6] Yellow fever is an outstanding example. In the past, yellow fever has attacked our population along the Atlantic seacoast and along the Gulf of Mexico, particularly in New Orleans, spreading from there northward up the Mississippi River as far as Memphis.

Measures for the control of this disease, such as elimination of the mosquitoes involved in its spread, principally by prevention of breeding, and the screening of sick persons to prevent infection of mosquitoes, have been successful in eradicating yellow fever from the United States. It still exists, however, in South America and in Africa. There is danger that airplanes and airships flying from South America to the United States across the Caribbean Sea may transport infected mosquitoes and start new foci of infection in areas where a susceptible population and the necessary mosquitoes of the right kind are to be found. The United States Public Health Service has charge of supervising such airplanes, to prevent the introduction of yellow fever mosquitoes infected in the southern hemisphere.[7] Of course, airplanes are relatively small compared with giant dirigibles, such as the Graf Zeppelin, and it may well be that a tremendous new field of exterminating will develop if such huge airships become common as a means of transportation. Unusual precautions were employed at the time the Graf Zeppelin flew from Brazil to the United States, to make sure that no dangerous carriers of disease in the form of yellow fever mosquitoes, or similar insects, were contained in any part of the colossal ship.

Airplanes are particularly menacing from the standpoint of introducing disease, because they cover great distances so quickly. An ordinary steamship consumes enough time between distant ports to enable passengers infected, let us say, in South America to develop symptoms of the disease before landing in this country, thus giving the quarantine authorities an opportunity of protecting the public in an adequate manner. Airplanes, on the other hand, may permit a person infected with yellow fever in Brazil to arrive in the United States before he becomes sick and thus may enable him to become the starting point of an epidemic soon after he lands here. Also, it should be noted that airplanes may land, either intentionally or be forced down, at inland points, where no quarantine facilities are available, which is not the case with ocean steamers. The possibilities of outbreaks of insect-borne diseases in areas not ordinarily subject to them, are emphasized by an epidemic of malaria fever which occurred last year in Aurora, in northern Ohio.[8]

IT might be worth while to take just a moment to mention some of the insects and rodents in connection with the more common diseases in which they are vectors of transmission. Let us consider the mosquitoes. Yellow fever is transmitted by one species of mosquitoes known as aedes. Malaria is spread by another species, known as anopheles, and dengue and filariasis are spread by still others. Malaria is an important cause of illness and death in the United States, especially in the southern part, and a great deal of work is done by the city, county, state and governmental health agencies to prevent this disease. It is probably the greatest deterrent to the civilization of the tropics. Dengue appears at intervals, but it is not so important in this country as malaria. Yellow fever is important in some countries, but fortunately not here at the present time. Where it appears, however, it is likely to have an extremely high

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death rate and cause terrible havoc. Spread of certain thread-worms, called Filaria bancrofti, by mosquitoes is largely confined to tropical countries, where these filaria are associated with enormous swellings of certain parts of the body, termed elephantiasis.

Flies may be factors in the spread of a number of common communicable diseases, to some extent, though probably in many of those diseases they are not important in comparison with other factors, such as personal contact. However, diseases of the gastro-intestinal tract, such as typhoid and paratyphoid fever, bacillary and amebic dysentery, Asiatic cholera, entero-colitis, and similar diseases, may frequently be spread by flies, especially where the flies have easy access to infected excreta. Certain kinds of flies also spread specific diseases. Examples are the tsetse fly which spreads African sleeping sickness, and the deer fly which is known to transmit tularemia.

Fleas and rats are largely responsible for the spread of bubonic plague, frequently referred to as the Black Death. The fleas carry the germs from rats to man, as well as from one rat to another. Fleas also are known to spread typhus fever, which is frequently referred to in the United States as Brill's disease.

Lice are probably the most important vector in the transmission of typhus fever in Europe and Asia and, under conditions such as those which prevailed during the War, these tiny insects have been responsible for hundreds of thousands of deaths. The trench fever observed during the World War of 1914-1918 is caused by a virus in the excreta of lice which have fed on patients suffering from the disease. They also spread relapsing fever. Ticks of various kinds are implicated in the spread of Rocky Mountain spotted fever, the tick-bite fever of South Africa, tularemia, and Colorado tick fever. Judging from our present knowledge of these insects, it is possible that they may be factors in the spread of other illnesses, about which relatively little is known.

Mites cause a disease in Japan known as Japanese River fever, and small flies are implicated in the spread of another disease called yaws. Sand-flies cause certain diseases, such as oriental sore and Pappataci fever. From the last named I myself suffered in Arabia. In Brazil, a trypanosomiasis is spread by certain bugs, called Triatoma bugs.

Another disease of rodents, in addition to bubonic plague which has already been mentioned, is rat-bite fever, which fortunately is not common, but occasionally does occur. Rabies may also be spread by rats. Numerous diseases of domestic animals of great economic importance, such as hog cholera, may be spread by insects or rodents, but it is my purpose to confine this discussion to diseases of human beings.

NUMEROUS insects may play some mechanical part in the spread of certain diseases, but are probably not important causative factors. For example, bedbugs have been found, under experimental laboratory conditions, to be able to spread certain diseases upon their biting parts. It is probably a purely mechanical transfer of the germs from one person to another and could be done in a similar manner upon the point of a knife or other instrument puncturing the skin. It seems probable, on occasions, that cockroaches and water-bugs may transmit diseases, such as dysentery and diarrhea, by contaminating foodstuffs by walking upon them after being around leaky sewer pipes.

Viewing cockroaches and bedbugs from the standpoint of disease transmission, one must admit that although some remote possibilities of illness may be expected, nevertheless their importance primarily relates to comfort and decency rather than health. Some persons are poisoned by bedbug bites and suffer some little discomfort, but without developing specific diseases.

Ants and silverfish may be a nuisance at times, but are not known to transmit disease. In fact, certain species of ants, namely the small red ants, have shown an inveterate hatred of bedbugs and have been known to destroy the bedbugs completely when they have invaded a house infested with them. Perhaps mention should be made of septicemia or blood poisoning which may occur by reason of germs entering the body through insect bites or the abrasions of the skin caused by scratching.

One could go on for a long time when dealing with so important and intriguing a subject as public health aspects of insect and rodent control. Cases could be multiplied in which not only property damage and discomfort have resulted, but whole populations have been destroyed through insects and rodents and diseases carried by them. The decline of the "glory that was Greece" is attributed in no small measure to the pernicious effects of malaria carried by tiny mosquitoes.

As long as we permit disease-spreading insects and rats to exist and multiply in our midst, we are inviting disaster. No one knows when a great conflagration like the Chicago Fire is going to break out, if existing conditions invite such a catastrophe. Neither do we know when some epidemic of disease is going to break out in our population, if insects and rodents are not kept under adequate control by proper exterminating and fumigating activities.

MAY I take this occasion to stress the importance of close cooperation between exterminators and fumigators on the one hand, and health authorities on the other. This cooperation has existed in a large measure in Chicago, in the formulation and application of our fumigation ordinance, which has now been in effect for more than six years, without a single fatality as a result of fumigation during this period. This record is both a credit to the industry and an assurance that the public health and the lives of our people are being safeguarded against the hazards peculiar to fumigation. An erroneous newspaper report recently attributed a death to a sulfur dioxide fumigation performed by a woman in her home,

(*Turn to Page* 127)

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NATIONAL ASSOCIATION OF INSECTICIDE & DISINFECTANT MANUFACTURERS

John H. Wright, Secretary

CHRYSLER BUILDING NEW YORK

Notes of the Trade

Black Flag Co., Baltimore, recently announced the appointment of the Merz-Mihm selling organization, as their representative for Black Flag insecticides in New York City and metropolitan area, and also in northern New Jersey.

Keller Products Co., 540 S. Front St., Columbus, Ohio, has recently been organized by J. W. Keller to sell the germicide "Dag" under license from Germicide Products, Buffalo, N. Y.

S. & G. Products Co., Detroit, sanitary products distributors, has recently undergone reorganization, with Sam Molin withdrawing from the company which will now operate under the sole direction of Casper Stern.

Midway Chemical Co. is adding space to its Chicago plant. A new branch plant has recently been opened in Toronto.

Odora Company, Inc., 547 West 27th St., New York, have moved sales and show rooms to 1270 Broadway, (Wilson Bldg.) New York City. The factory and general offices remain at their former address.

R. N. Chipman, Chipman Chemical Co., Boundbrook, N. J., has recently been elected chairman of the Agricultural Insecticide & Fungicide Association.

The Hoboken, N. J. plant of Windsor Wax Co., which was damaged by fire recently, has been completely rebuilt. New machinery was installed in the course of rebuilding and the modernized plant is now in full operation.

Zonite Products Corporation and subsidiaries report an income of $54,691 for the quarter ended Sept. 30, as compared with a loss of $308,524 in the preceding quarter. The net loss for the nine months ended Sept. 30 was $448,972 as compared with net income of $267,177 for the same period in 1934.

DISINFECTANTS AND DEALERS

What does the average retail dealer know about disinfectants? Is he in a position to recommend intelligently a "good" disinfectant,—or a disinfectant for this or that purpose? And where does this all fit into the disinfectant sales picture? Read the results of a study of disinfectant sales in the retail market by Florence Wright in an early issue of SOAP.

HUDSON SPRAYERS

OFF TO A GOOD START FOR 1936!

What's the big angle in your 1936 campaign to sell insecticides?

Distribution? Why not tie-up with a combination sprayer deal? Hudson sprayers will help you sell. Retailers like them in their stores. Users like them, too.

Repeat Business? Making a good insecticide is only the first step in killing insect pests. The next step is applying it. When your customers use Hudson sprayers you can be sure that they're giving them complete atomization for the greatest kill. That's what makes satisfied customers come back for more. After all, it's *results* that count!

SEE US AT THE CONVENTION

We've made some new improvements in sprayers for 1936. Ask the Hudson representative. No matter what your problem of application may be, Hudson has exactly the type of sprayer you need for household or commercial work. Hudson experts will gladly work with you to select the sprayer that will give your retail distribution and sales a boost. Come in and talk it over at the convention.

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DR. WHITE FOR CONTROLLER!

While many prominent politicians seek the job, reports from Philadelphia indicate that Dr. Robert C. White, president of the Robert C. White Co. of that city, former president of the National Association of Insecticide & Disinfectant Manufacturers, former head of the Insecticide and Disinfectant Code Authority, and widely known in the insecticide industry, has been offered the position of City Controller of Philadelphia to succeed Mayor-elect Wilson. He has not indicated yet whether he will accept the politically prominent appointment. Although a Republican, Dr. White is reported to have been offered the controllership by Democratic leader John B. Kelly of Philadelphia. In the last election, he headed a committee of 1,000 business men to aid the Democratic candidate Wilson. Although comparatively inactive in politics heretofore, Dr. White is well-known in Philadelphia, especially for his work in putting the Penn A. C. of that city on its feet financially in 1933-34.

S. C. Johnson & Son, Inc., Racine, Wis., maker of paste and liquid wax products, is featuring an amateur song writer's contest on its NBC radio broadcasting program. A cash prize will be given to the winning writer and his winning song will be published.

—— ♦ ——

Poisonous insecticides for sale in the State of New York must carry the name and street address of the manufacturer as well as the red poison designation, according to the statement of G. W. Mather, N. Y. State Board of Pharmacy, Albany, interviewed early this month by a representative of *Soap*. The board considers a product poisonous if as many as 60 grains or less will constitute a fatal dose. According to Mr. Mather the ordinary pyrethrum-type household insecticide is not meant to be affected by the regulation, but only insecticides of the poisonous type. Manufacturers who have on hand a supply of packages will be given ample time to dispose of such stock, if they act in good faith, Mr. Mather stated.

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The Professional Exterminators Association will meet in the club rooms of the Building Service Employers Association, 2 Park Ave., New York, at 8:00 P. M. on the evening of December 12.

EXTERMINATORS SET 1936 CONVENTION DATE

The date for the 1936 convention of the National Association of Exterminators & Fumigators has been set for October 26-27-28, at the Hotel Statler, Cleveland, by the board of directors. Plans are already under way for next year's meeting with a view to preparing an even more useful program than at the recent Detroit gathering. It has been proposed to conduct a clinic providing for small discussion groups in which actual questions on specific exterminating problems can be answered by men who have been unusually successful in work of each particular type. It is felt that smaller groups will provide for greater freedom of expression and will give those who have specific problems a chance to go into more detail than could be permitted on the meeting floor.

The national association committee in charge of the 1936 meeting is composed of H. K. Steckel, chairman, Otto Orkin, J. N. Seidman, B. U. Baker, W. K. Smith, W. O. Buettner and C. Norman Dold, ex-officio and Robert W. Laing, ex-officio. All local arrangements will be in charge of a Cleveland committee of which Robert W. Laing is chairman. Sub-committee chairmen will include: A. M. Akers, treasurer and publicity; Larry McKenna, entertainment; William Kirchner, booth display and advertising; Mrs. R. W. Laing, ladies, and F. E. Petersen, registration. Other members of the committee will be announced later.

—— ♦ ——

Jack A. Dorland, with the New York office of the Dow Chemical Co. for the past three years, has joined the sales force. He will work in the metropolitan territory and will specialize on paradichlorbenzene, methyl sallicylate, solvents, and other products for the soap and sanitary specialty field.

—— ♦ ——

O-Cedar Corporation, Chicago, has appointed the John H. Dunham Company, of that city, as its advertising agency. New plans call for a return to magazine advertising for the first time since 1932.

The latest thing in sprayers, the non-drip streamline sprayer with oval container of the Volume Sprayer Manufacturing Co. of Tulsa, Okla., formerly the Vaughan Manufacturing Co. Now offered in a number of models, from very small single action up to large double-action continuous sprayers, including a small continuous model.

★ THE SEASON'S GREETINGS

WE EXTEND OUR BEST WISHES FOR A
1936
FULL OF HEALTH, HAPPINESS AND
PROSPERITY

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IN ROUNDING OUT 38 YEARS OF UNINTERRUPTED SERVICE TO THE JOBBERS OF SANITARY PRODUCTS WE AGAIN EMPHASIZE OUR PRINCIPLE OF QUALITY AT LOW COST AND WE INVITE YOU TO CONTINUE TO REGARD US AS "YOUR MOST LOGICAL AND ECONOMICAL SOURCE OF SUPPLY"

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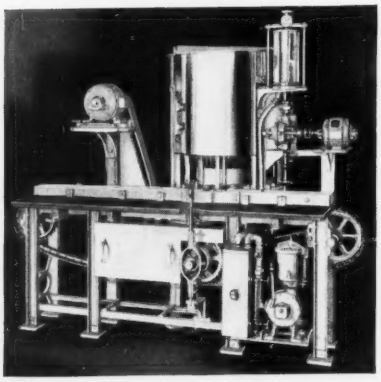

There is a U. S. Rotary Filling machine built to handle any product filled in any size or shape bottle that will stand on its own base. Tubes have no complicated parts—requires no adjustment for bottles of varying height. No bottle raising tables insuring continual and smooth operation. A recognized standard machine used by outstanding bottlers.

We Manufacture and Install Bottle Washers and Cleaners — Filters — Fillers — Cappers Corkers — Conveyors and Water Stills

U. S. BOTTLERS MACHINERY CO.
4012 No. Rockwell St. Chicago, Ill.
Offices in all principal cities

NEW PATENTS

(*From Page* 51)

No. 2,017,506, Insecticide. Patented October 15, 1935 by Lindley E. Mills, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich. A composition of matter adapted to be mixed with water and an emulsifying agent to form an emulsion suitable for use as a plant and tree spray comprising a petroleum distillate and ortho-dichlorobenzene.

No. 2,017,568, A Flame Resistant Cleaning Fluid. Patented October 15, 1935 by George L. Parkhurst, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill. Process of manufacturing a flame-resistant solvent mixture suitable for use in dry cleaning from a mixture of hydrocarbons substantially free from hydrocarbons having more than two carbon atoms per molecule, comprising intensively chlorinating the hydrocarbons, separating the liquid chlorination products, fractionally distilling the liquid chlorination products to yield a cut having an initial distillation temperature substantially within the range 150° F. to 275° F. and a maximum distillation temperature substantially within the range 195° F. to 350° F., the initial and maximum distillation temperatures being separated by from about 45° F. to about 180° F. and blending the cut with a substantial amount of a naphtha having distillation characteristics substantially similar to those of the cut.

No. 2,017,594, Insecticide. Patented October 15, 1935 by Charles B. Gnadinger, Minneapolis, Minn. An insecticide containing a seleno-sulphide of an alkali metal selected from the group consisting of sodium and potassium.

No. 2,017,595, Insecticide. Patented October 15, 1935 by Charles B. Gnadinger, Minneapolis, Minn. An insecticide containing ammonium seleno-sulphide.

No. 2,018,507, Dry Cleaning Composition and Process. Patented October 22, 1935 by William H. Alton, New York, N. Y., assignor to R. T. Vanderbilt Company, New York, N. Y. In the dry cleaning of fabrics, with cleaning of the dirty dry cleaning liquid by circulating through a filter, the improvement which comprises adding to the dirty dry cleaning liquid a filtering material in the form of graded sizes of a material which absorbs little water, and passing the resulting liquid and admixed filtering material through the filter whereby the larger sizes of the graded material build up a filtering foundation supporting the finer particles which insure a fine straining action on the passing liquid.

———♦———

Lehn & Fink Products Co. reports net profits of $204,055, after charges and federal taxes, for the nine months ending September 30, as compared to $448,331 for same period in 1934.

———♦———

Acme Sanitary Supply Co., formerly of 1505 East 13th Ave., Denver, Colo., have moved to 2819 Larimer St., Denver.

DETERMINATION OF PHENOLS IN SOAP

Phenol and cresols in soap may be determined as follows: Weigh 5 grams of the soap into a flask. Dissolve the soap in water and acidify with 25 cc. of 6 *N* sulfuric acid. Steam-distil and collect about 450 cc. of the distillate in a 500 cc. volumetric flask. Continue the distillation until the distillate gives no precipitate with bromine-water. Add 25 cc. of 0.1 *N* sodium hydroxide solution to the distillate, a few cc. of a *N* solution of calcium chloride and dilute to volume. Filter.

Shake 50 cc. of filtrate in a stoppered flask, with excess bromine-water, to ascertain whether the soap contains phenol or cresols. If the precipitate formed by the bromine-water is crystalline and silky, phenol is present. If the solution after addition of the bromine-water becomes milky-looking and remains so, cresols are present.

Take three glass-stoppered flasks and add to number 1, 25 cc. of distilled water, to number 2, 25 cc. of a standard cresol or phenol solution, and to number 3, 1/20th of the filtered distillate from the soap. Add to each of the three flasks, 25 cc. of the mixed solution of potassium bromide and potassium bromate described below, and then 5 cc. of concentrated hydrochloric acid. Allow an interval of 5 minutes between the addition of the hydrochloric acid to the first flask and the addition of the acid to each of the successive flasks. Shake each flask and let stand for 15 minutes. Add to each 30 cc. of an approximately 0.5 *N* solution of potassium iodide. Mix and let stand for 5 minutes, then titrate each solution with 0.1 *N* sodium thiosulfate solution with starch as an indicator.

If W = weight of soap taken,

a = no. of cc. of thiosulfate solution for the blank test

b = no. of cc. of thiosulfate solution for the standard

c = no. of cc. of thiosulfate solution for the sample distillate, the per cent of carbolic acid equals

$$\frac{a - c}{a - b} \times \frac{20 \times 100}{40\ W}$$

The reagents needed are as follows:

1. A standard cresol solution is made by dissolving 0.35 gram of ortho-cresol, 0.40 gram of meta-cresol and 0.25 gram of para-cresol in 10 cc. of 0.1 *N* sodium hydroxide solution and diluting to 1 liter.

2. A standard phenol solution is made by dissolving 1 gram of crystalline phenol in 10 cc. of 0.1 *N* sodium hydroxide solution and diluting to 1 liter.

3. The potassium bromide-potassium bromate solution consists of 19.8 grams of potassium bromide and 5.6 grams of potassium bromate dissolved in water and diluted to 1 liter. *The Industrial Chemist* **11,** 403 (1935).

———♦———

Public Exterminating Co., formerly of 828 North Clark St., Chicago, have moved to 1325 S. Michigan Blvd.

IT'S THE *Big News* IN SPRAYERS!

IT'S the Lowell Nu-Action! And this new principle is a revolutionary improvement in sprayer design. It's the self-flexing plunger leather that spreads around the cone at each stroke; keeps it fresh and pliable. It insures maximum force . . . maximum pressure . . . greater atomization of your spraying solution.

It gives you the floating vapor that reaches every crack and crevice of the room—seeks out hidden insects—kills them!

The Nu-Action feature is available on a wide variety of Lowell Sprayers. Choose the one that is best suited to your own requirements. Make it available to your customers. They'll thank you for it with bigger repeat business.

No. 265 Sprayer
Has Lowell Nu-Action feature to assure full spraying efficiency. Curved syphon tube enables it to spray in vertical position. Cap. 1 pint.

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North Pier Terminal CHICAGO, ILLINOIS Opposite Navy Pier

LOWELL SPRAYERS

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for changing to a Deodorized Base

We Offer You

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The Completely Deodorized Insecticide Base

MADE RIGHT **PRICED RIGHT**

Tested and Proven to be without Superiority

O'CONNOR & KREMP

Sole Agents

11 West 42nd St. **New York, N. Y.**

INSECT AND RODENT CONTROL

(*From Page* 119)

but the Coroner's investigation showed that the death was due to natural causes, namely bronchial asthma and myocarditis, a form of heart trouble, and not to the effect of fumigation.

While such cooperation as we in the Chicago Board of Health have enjoyed with the fumigation industry, is most desirable, both for the protection of the public and for the good name of the industry, yet, I believe, that this mutual helpfulness should only be the beginning and that it should extend to still greater prevention of disease and untimely death. This should not be done by legislation or control, but rather by better understanding of our problems and by public education as to the great public health advantages to be secured by proper extermination of insects and rodents. If there is any way in which the Chicago Board of Health can be of service to your industry, I feel sure that Dr. Bundesen, president of the Board, would be glad to have you get in touch with him.

In conclusion, permit me to say that public health is the greatest benefit you can confer upon mankind, far transcending economic considerations and comfort. Learn all you can about health, particularly as insects and rodents may and do affect it, and tell the story in your advertising. It will prove to be an "open sesame" which will unlock for you the doors of opportunity to better business, increased returns, and, most important of all, to better health and longer, more useful lives for all our people.

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EVALUATION OF SHOE CLEANERS

(*From Page* 28)

Table V

Whiteness:	*Sample* 40 %	*Sample* 46 %	*Sample* 47 %	*Sample* 49 %	*Sample* 50 %
Standard Leather	90.8	90.8	90.8	90.8	90.8
After 1st application	93.1	94.1	92.1	91.1	95.0
After 2nd application	94.0	94.8	95.0	91.3	95.1
After 3rd application	94.2	95.2	96.1	91.6	95.1
After 4th application	95.0	95.2	96.3	92.1	95.1
After 5th application	95.2	95.2	96.4	92.3	95.1

As in the case of the black shoe dressings, the apparent color changes may be calculated quite readily using the formula following Table II. In this case, however, Ba is taken to represent the "whiteness" of any particular application and Bs the "whiteness" of the standard leather.

Table VI

Apparent Color Changes:	*Sample* 40 %	*Sample* 46 %	*Sample* 47 %	*Sample* 49 %	*Sample* 50 %
After 1st application	2.3	3.3	1.3	0.3	4.2
After 2nd application	3.2	4.0	4.2	0.5	4.3
After 3rd application	3.4	4.4	5.3	0.8	4.3
After 4th application	4.2	4.4	5.5	1.3	4.3
After 5th application	4.4	4.4	5.6	1.5	4.3

By using the formula following Table III, the apparent color changes can be calculated to actual color changes on the basis of the whiteness of the standard leather. This time most of the actual color changes differ from the apparent color changes, as shown in the following:

Table VII

Actual Color Changes:	*Sample* 40 %	*Sample* 46 %	*Sample* 47 %	*Sample* 49 %	*Sample* 50 %
After 1st application	2.5	3.6	1.4	0.3	4.6
After 2nd application	3.5	4.4	4.6	0.6	4.7
After 3rd application	3.7	4.8	5.8	0.9	4.7
After 4th application	4.6	4.8	6.1	1.4	4.7
After 5th application	4.8	4.8	6.2	1.7	4.7

The figures in the above table, as well as those in Table III, thus represent the actual changes in color as determined by changes in the reflecting power, giving the composite effect of changes in both color and gloss.

The examples given thus far have served to illustrate a method of definitely establishing the changes in color and gloss due only to the application of shoe dressings. In the following paragraphs the writer wishes to suggest further lines of attack for a rather exhaustive study of shoe dressings and polishes.

Certain types of liquid shoe dressings, for example, require a light polishing with a soft cloth or the like to produce a satisfactory gloss. The desirability or need of such a polishing may most definitely be established by subjecting the leather with the applied coatings to a polishing and then determining the reflection factors. As a concrete example, the shoe dressings already evaluated in Table I were treated in this manner.

Table VIII

Reflection Factors:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
Standard Leather	4.3	4.3	4.3	4.3	4.3
After polishing	4.3	4.3	4.3	4.3	4.3
After 1st application and rubbing	4.8	4.0	4.2	4.6	4.7
After 2nd application and rubbing	4.0	3.9	3.6	4.3	4.4
After 3rd application and rubbing	4.0	3.9	3.6	4.1	4.1
After 4th application and rubbing	4.0	3.8	3.6	4.0	4.0
After 5th application and rubbing	4.0	3.8	3.6	3.9	4.0

As in the past examples, these figures may be converted further:

Table IX

Blackness:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
Standard Leather	95.7	95.7	95.7	95.7	95.7
After polishing	95.7	95.7	95.7	95.7	95.7
After 1st application and polishing	95.2	96.0	95.8	95.4	95.3
After 2nd application and polishing	96.0	96.1	96.4	95.7	95.6
After 3rd application and polishing	96.0	96.1	96.4	95.9	95.9
After 4th application and polishing	96.0	96.2	96.4	96.0	96.0
After 5th application and polishing	96.0	96.2	96.4	96.1	96.0

Table X

Color Changes:	*Sample* 9 %	*Sample* 11 %	*Sample* 12 %	*Sample* 14 %	*Sample* 18 %
Standard leather after polishing.	0.0	0.0	0.0	0.0	0.0
After 1st application and polishing	—0.5	0.3	0.1	—0.3	—0.4
After 2nd application and polishing	0.3	0.4	0.7	0.0	—0.1
After 3rd application and polishing	0.3	0.4	0.7	0.2	0.2
After 4th application and polishing	0.3	0.5	0.7	0.3	0.3
After 5th application and polishing	0.3	0.5	0.7	0.4	0.3

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In Style with Proven Patented Principles

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INTERMITTENT
CONTINUOUS
DOUBLE ACTION

SIZES FOR ALL PURPOSES

Only one manufacturer makes the best sprayer.

Volume Sprayer Mfg. Co.
TULSA, OKLAHOMA

Here again the apparent color changes are identical with the actual color changes if the calculations are carried out to only one decimal point.

Reflection factors also offer an excellent opportunity for the study of the resistance of the applied coatings to various mechanical effects simulating conditions met with during the wearing of shoes. In the following tabulation, for example, are listed the reflection factors of several samples of black shoe pastes as applied to a standard leather and then subjected to the action of a water spray for a period of one hour each. (It should be noted that in the following that a different leather had been taken as the standard.)

Table XI

Reflection Factors:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
Standard leather	4.8	4.8	4.8	4.8
After 3 applications	3.6	3.8	3.4	3.9
After water-spray test	4.7	3.9	4.2	4.5

Table XII

Blackness:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
Standard leather	95.2	95.2	95.2	95.2
After 3 applications	96.4	96.2	96.6	96.1
After water-spray test	95.3	96.1	95.8	95.3

Table XIII

Apparent Color Changes:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 3 applications	1.2	1.0	1.4	0.9
After water-spray test	0.1	0.9	0.6	0.3

Table XIV

Actual Color Changes:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 3 applications	1.3	1.1	1.5	0.9
After water-spray test	0.1	0.9	0.6	0.3

As a few additional examples of the value of practical tests simulating in part at least actual conditions of wear, the following are presented:

Table XV

Reflection Factors:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 10 hours under Ultra-Violet Rays at 80° F.	5.1	4.8	4.9	5.2
After 3 hours abrasion	8.3	6.1	9.0	10.6
After 12 hours at 110° F.	5.3	4.6	4.9	5.1
After 12 hours at 28° F.	4.8	5.0	4.8	4.8

Table XVI

Blackness:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 10 hours under Ultra-Violet Rays at 80° F.	94.9	95.2	95.1	94.8
After 3 hours abrasion	91.7	93.9	91.0	89.4
After 12 hours at 110° F.	94.7	95.4	95.1	94.9
After 12 hours at 28° F.	95.2	95.0	95.2	95.2

Table XVII

Apparent Color Changes:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 10 hours under Ultra-Violet Rays at 80° F.	—0.3	0.0	—0.1	—0.4
After 3 hours abrasion	—3.5	—1.3	—4.2	—5.8
After 12 hours at 110° F.	—0.5	0.2	—0.1	—0.3
After 12 hours at 28° F.	0.0	—0.2	0.0	0.0

Table XVIII

Actual Color Changes:	*Sample* 36 %	*Sample* 38 %	*Sample* 51 %	*Sample* 53 %
After 10 hours under Ultra-Violet Rays at 80° F.	—0.3	0.0	—0.1	—0.4
After 3 hours abrasion	—3.7	—1.4	—4.4	—6.1
After 12 hours at 110° F.	—0.5	0.2	—0.1	—0.3
After 12 hours at 28° F.	0.0	—0.2	0.0	0.0

It is evident that an entirely new field for a truly critical study is thus opened. Other tests have been devised to simulate other specific conditions of wear and the resistance of the coatings under these conditions, and many other tests and modifications will readily suggest themselves to those who make a really serious study of the problem. But whether or not such a detailed study is undertaken, the fact remains that even for very limited comparisons the outlined method is of immense value.

In the study of shoe polishes and dressings the question of quality may also be considered from another angle, giving results which can be transmitted most readily to the non-technical consumers—the determination of the maximum or ultimate hiding power of the product under consideration. If Tables III and VII are studied carefully, it will be noted that for some of the samples the actual color change reaches a constant figure with all subsequent applications. If the applications are carried out far enough (the writer has data on as many as 40 successive applications) the actual color change will always remain constant at some definite point. Maximum or ultimate hiding power may, therefore, be considered as being that actual color change which remains constant on three or more successive applications. Thus, from the tables referred to, the following figures for ultimate hiding power may be collected:

Table XIX

Sample	*Ultimate Hiding Power*
9	0.8%
46	4.8%
50	4.7%

Such figures have a very definite meaning and appeal to the non-technical consumers and may, in many cases, answer all their requirements. Such figures also lend themselves admirably to advertising purposes.

It should also be noted that a great deal of the data collected by this method lends itself admirably to the construction of graphs. A very interesting graph may be constructed, for example, by plotting the actual changes against the successive applications.

In concluding the writer again wishes to stress the fact that it was the purpose of this paper merely to suggest the possibilities of the described quantitative method without attempting to describe the actual mechanics involved in obtaining of this data, without attempting to interpret the results to any extent whatsoever, and without in any way attempting to establish any standards of quality or standards of test procedures. The actual mechanics involved in obtaining this data and the interpretation of the test results obtained will form the basis of future papers and standardization should eventually be undertaken by responsible organizations and not individuals as at present the conceptions of desired quality differ greatly with different manufacturers.

(1) Bulletin No. 108, Eimer & Amend, New York City.

(2) All reflection factors listed in this paper are the averages of five individual determinations.

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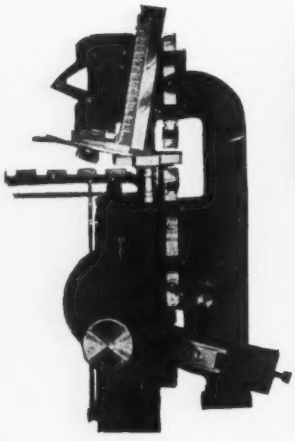

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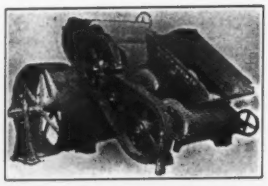

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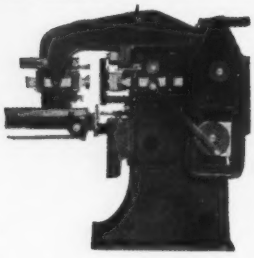

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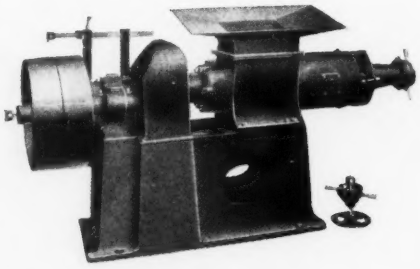

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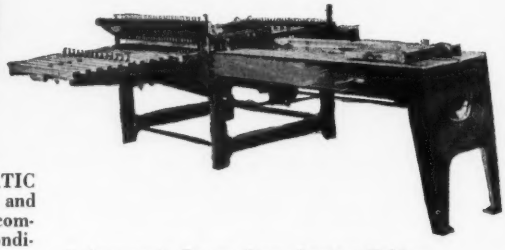

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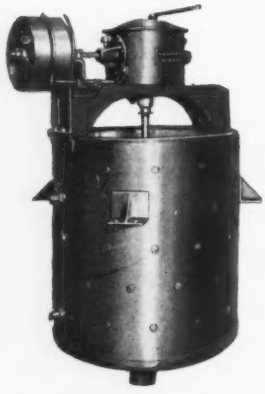

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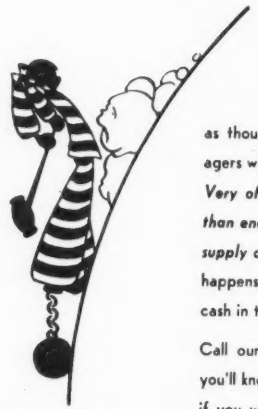

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Statement of the ownership, management, circulation, etc., required by the Act of Congress of March 3, 1933, of Soap, published monthly at New York, N. Y., for October 1, 1935.

State of New York, County of New York.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Grant A. Dorland, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Soap and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, MacNair-Dorland Company, Inc., 254 W. 32nd St., N. Y. C.; Editor, Ira P. MacNair, 254 W. 32nd St., N. Y. C.; Managing Editor, None; Business Manager, Grant A. Dorland, 254 W. 32nd St., N. Y. C.

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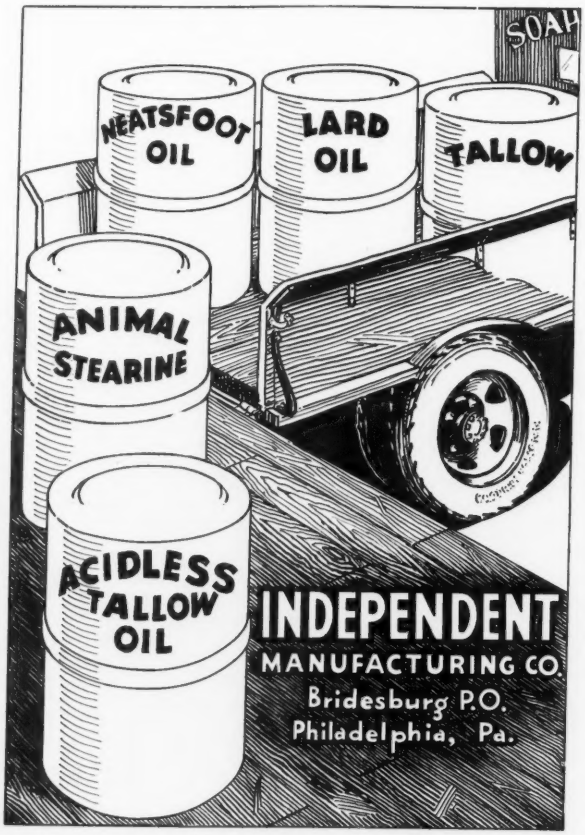

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E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Grasselli Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Co.
Innis, Speiden & Co.
Mechling Bros. Chemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS
(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
T. G. Cooper & Co.
Innis, Speiden & Co.
Koppers Products Co.
Monsanto Chemical Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Pylam Products Co.

CONTAINERS and CLOSURES

American Can Co. (Tin Cans, Steel Pails)
Anchor Cap & Closure Corp. (Closures & Bottles)
Cin-Made Corp. (Paper Cans)
Continental Can Co. (Tin Cans)
General Can Co. (Tin Cans)
Hinde & Dauch (Corrugated Fibre Products)
Maryland Glass Corp. (Bottles)
National Can Co. (Tin Cans)
Owens-Illinois Glass Co. (Bottles)
Wilson & Bennett Mfg. Co. (Steel Pails and Drums)

DEODORIZING BLOCK HOLDERS

Cin-Made Corp. (Paper)
Clifton Chemical Co.
Eagle Soap Corp.
Fuld Bros.
Palmer Products, Inc.

ESSENTIAL OILS

Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Leghorn Trading Co.
Magnus, Mabee & Reynard, Inc.
Schimmel & Co
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.

(Continued on page 138)

PROFESSIONAL DIRECTORY

PEASE LABORATORIES, Inc.
Chemists, Bacteriologists, Sanitarians
39 West 38th Street
New York
Food, Drug and Cosmetic Problems—Compliance with Official Requirements—Meeting New and Anticipated Competitions with Improved and New Products

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Disinfectant and Insecticide Tests
Toxicity and Skin Irritation Tests
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strength of Insecticides
by PEET GRADY METHOD
(Official I. & D. code method) and
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger's Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
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LOUIS J. MUEHLE & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS
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Consultation *Formulas*
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May this Christmas be a period of giving thanks for a prosperous year and this New Year the start of an even more prosperous one for you.
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Chemists-Engineers
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Brooklyn, N. Y.

Skinner & Sherman, Inc.
246 Stuart Street, Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for germicidal value or phenol coefficient by any of the recognized methods.
Research—Analyses—Tests

RAW MATERIAL AND EQUIPMENT GUIDE

(*Continued from page* 136)

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MACHINERY

Battle Creek Wrapping Machine Co. (Packaging Machinery)
Ertel Engineering Corp. (Filters, Mixers, Bottle Fillers)
Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
International Nickel Co. (Monel Metal)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Package Machinery Co. (Packaging)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Stokes & Smith Co. (Packing Machinery)
U. S. Bottlers Machinery Co. (Bottle Filling and Cleaning)

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.
Stein-Brill Co.

MISCELLANEOUS

Anchor Cap & Closure Corp. (Metal Caps)
T. G. Cooper & Co. (Waxes)
Dobbins Mfg. Co. (Pails, Mop Wringers, etc.)
General Chemical Co. (Fluorides)
General Naval Stores Co. (Pine Oil-Rosin)
Glyco Products Co. (Solvents, Waxes, etc.)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Sales Co. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants and Waxes)
Murray & Nickell Mfg. Co. (Moth Proofing Liquid)
Pylam Products Co. (Lathering Agent)
Rohm & Haas Co. (Insecticide Base)

OILS AND FATS

Balfour, Guthrie & Co.
T. G. Cooper & Co.
Eastern Industries
Independent Mfg. Co.
Industrial Chemical Sales Co.
Leghorn Trading Co.
Michel Export Co.
Murray Oil Products Co.
Newman Tallow & Soap Machinery Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING COMPOUNDS

Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
P. R. Dreyer, Inc.
Felton Chemical Corp.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Schimmel & Co.
Ungerer & Co.
Van Ameringen-Haebler. Inc.

PETROLEUM PRODUCTS

Atlantic Mfg. Co.
O'Connor & Kremp
Sherwood Petroleum Co
L. Sonneborn Sons.

PYRETHRUM AND DERRIS PRODUCTS

Insect Flowers and Powder, Pyrenthrum Extract. Derris Products

An-Fo Mfg. Co. (Extract)
Derris, Inc.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.
Sherwood Petroleum Co.

SOAP DISPENSERS

Clifton Chemical Co.
Eagle Soap Corp.
Fuld Bros.
Palmer Products

SODIUM SILICATE

General Chemical Co.
Grasselli Chemical Co.
Mechling Bros. Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SPRAYERS

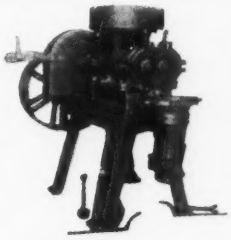
Breuer Electric Mfg. Co.
Dobbins Mfg. Co.
Fumeral Co.
Getz Exterminators
Hudson Mfg. Co.
Lowell Sprayer Co.
Volume Sprayer Mfg. Co.

TRI SODIUM PHOSPHATE

General Chemical Co.
Grasselli Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

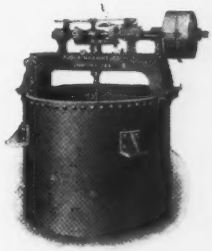
Beat High Labor Costs with INCREASED PRODUCTIVE EFFICIENCY!

With wages of workers steadily mounting, it is essential that you maintain machine efficiency high to keep the total of your production costs in line. It is particularly poor economy now to keep old machinery in use—clogging your production line and leading to costly delays.



This sturdy Rutchman plodder is built to last. No heavy repair bills or breakdowns to pile up costs. Standard equipment in American soap factories since 1860.

Huber Crutcher. Not the cheapest, perhaps, but in the long run will prove its economy through many years of trouble-free operation. We also offer a handy dry mixer.



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265 46TH STREET BROOKLYN, N. Y.

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Fatty Alcohols

Cetyl Oleic Stearic
Lanolic Cholesterol

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Always fresh
Easy to handle
Absolutely non-inflammable

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MODERN COSMETICS

Four hundred pages of practical, usable information for the manufacturer of cosmetics. Complete and authoritative, the result of more than a year's work carefully compiling and checking information. This is the first practical manual for the manufacturer. covering every phase of cosmetic manufacturing. A valuable reference book, yet it is written so clearly and with a minimum use of technical terms that it will be found particularly valuable to the manufacturer with limited technical training.

Price - Six Dollars - Order from

MAC NAIR-DORLAND COMPANY, Inc.
254 WEST 31st STREET NEW YORK CITY

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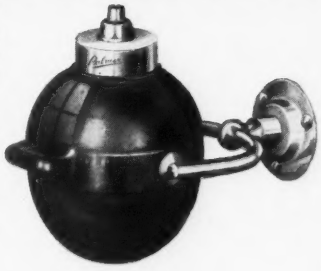
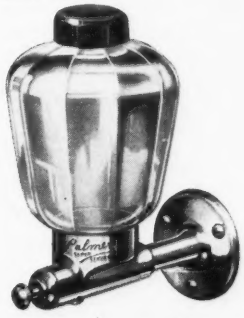
PALMER DISPENSERS

The new "TI-POWDER" dispenser (at right) is positive in operation, no springs or mechanical parts to get out of order. Tilting dispenser delivers predetermined quantity of soap—wasteful continuous flow absolutely impossible. Tamper-proof, easily cleaned. Metal parts chrome plated — black china, opal or clear crystal glass bowl.





Palmer SUPER-SERVER (left)—priced low, has no equal in value. Metal parts of stainless chrome alloy. One piece bracket in satin chrome-like finish. Valve parts easily removed for cleaning or replacement. Crystal glass decagon bowl, black enameled cap. Large 1-inch opening makes filling easy. Lowest priced push-in dispenser—yet neat, compact, durable.

Palmer PRODUCTS INC
WAUKESHA, WIS.
Adjacent to Milwaukee

Write for new catalog on complete Palmer line of soap dispensers; janitor and sanitary supplies, maintenance materials and equipment.

27
BIOLOGICAL TESTS
MADE ON 1935 RUNS OF

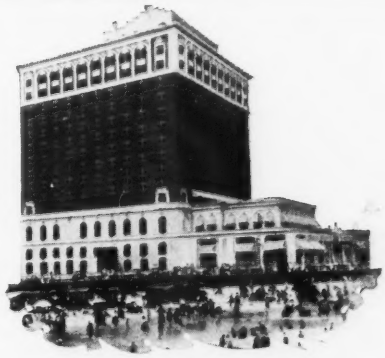
AN-FO BRAND No. 20

CONCENTRATED
PYRETHRUM EXTRACT
DILUTED WITH 19 VOLUMES OF KEROSENE
AVERAGED

KNOCKDOWN	10 min.	99%
KILL	24 hr.	69%

HIGH KILL
THE MOST IMPORTANT QUALITY IN YOUR
FLY SPRAY
WRITE FOR SAMPLES AND PRICES

AN-FO MFG. CO., OAKLAND, CALIF.



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Spacious comfortable lounges . . . dining salons . . . ballrooms . . . sun parlors . . . sun decks . . . excellent cuisine.

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Tennis -- Fishing -- Horse Back Riding

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The President
ATLANTIC CITY, NEW JERSEY

THIS Getz Em!

A HANDY BLOWER that can be used in all positions saving powder and getting into the spots where powder KILLS all roaches and insects.

Sell More . .

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The manufacturing and service facilities of 14 modern and well equipped Hinde and Dauch factories are back of all Selmor Merchandise Displays. National advertisers find the Selmor principle of merchandising sound and profitable. Thousands in use daily are attracting the consumer's attention, urging and suggesting "buy now"! If you want more sales, put a Selmor Display Stand to work at once. It's a marvelous "silent salesman." « «

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COMPANY _____

ADDRESS _____

CITY _____ STATE _____

Here and There

CALLING upon the powers-that-be to remove the three-cent excise tax on coconut oil, *The New York Tribune* in a most beautifully garbled editorial said recently: " . . . not in the interest of soap, which is not paying it, but in the name of common decency." What do they mean,—soap is not paying the tax? How the soapers wish this were true. And the same editorial refers to John B. Gordon, arch-enemy of the tax, as "Mr. John B. Gorham." We have heard John Gordon called lots of full and fancy names by the renderers, but it falls to the lot of the N. Y. *Trib* to invent the newest one. Maybe it is just a new alias to fool the "dairy" interests.

—— ♦ ——

A high school in Leominster, Mass., is now giving a course in cosmetics. In their use or manufacture? We don't know, but we must say that dear old New England is certainly becoming beauty conscious with a vengeance.

—— ♦ ——

Ninety-five years with an unbroken chain of the business passing from father to son . . . now the fourth generation in the management . . . this is the record of which Alfred Savage & Son, well-known Canadian soap manufacturers, can be justly proud. Best wishes to the newest member of the family to join the firm, Gordon C. Savage. May we be on deck to help them celebrate the 100th anniversary of the firm in 1940!

—— ♦ ——

Incidentally don't forget your subscription renewal. That new and bigger and better 1936 Soap Blue Book and Catalog will be out soon. If your subscription is paid up, you will automatically receive a copy. Better send in that subscription check now!

—— ♦ ——

Spraying your wife with a liquid insecticide, and "nearly suffocating her" may be cause for divorce in the State of New Jersey, if a case recently filed in Trenton is any criterion. Must have been quite some insecticide! And maybe it gives a high kill on bugs by drowning.

—— ♦ ——

A good resolution for 1936—to advertise in A.B.C. trade journals.

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LAVENDER

"Where You Now Use Oil Lavender Fleurs
Try Unco Simile Lavender"

A GENUINE shortage now exists in Oil Lavender Fleurs — all grades — due to the third successive year of poor crops. Indications are that this condition will continue indefinitely, with a maintenance of present high prices.

UNCO Simile Lavender is the ideal odor for Soaps. It is cheaper than Oil Lavender Fleurs U.S.P., and is not subject to the price fluctuations we are witnessing at present. In addition, you are assured of a greater odor value and stability by its use.

$2.75 per pound

UNGERER & CO.

13-15 West 20th St.

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Standardized

in the most complete testing laboratories in the insecticide industry

A uniform, standardized pyrethrum concentrate, with a guaranteed minimum content of 2.0 grams of pyrethrins per 100 cc.—equivalent to 2.4% pyrethrins. Controlled by chemical assay—checked by comparative spray tests using both "Campbell" and "Peet-Grady" Methods. Our recommendations are based on field performance. Write for information.

McCormick & Co., Inc., Baltimore, Md.

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PYRETHROL 20

McCormick's **STANDARDIZED PYRETHRUM AND DERRIS PRODUCTS**

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DERRIS EXTRACT • DERRIS RESINATE • ROTENONE CRYSTALS